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THE HARVARD SCHOOL OF PUBLIC HEALTH



COURSES OF INSTRUCTION
FOR THE YEAR 1947-48

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ANNOUNCEMENT
OF THE
HARVARD SCHOOL OF
PUBLIC HEALTH

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1947

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CONTENTS

CALENDAR FOR THE ACADEMIC YEAR 1947-48	5
ADMINISTRATIVE OFFICERS	6
FACULTY OF PUBLIC HEALTH	7
ADMINISTRATIVE BOARD	9
COMMITTEES OF THE FACULTY	10
VISITING COMMITTEE OF THE BOARD OF OVERSEERS	10
HISTORICAL STATEMENT	11
GENERAL STATEMENT	12
Programs of Study	12
Facilities	13
REQUIREMENTS FOR ADMISSION AND FOR DEGREES	15
Master of Public Health	15
Doctor of Public Health	19
Master of Science in Hygiene	20
Doctor of Science in Hygiene	21
Special Students	22
Master of Education in Public Health Education	23
Master or Doctor of Science in Engineering	24
GENERAL INFORMATION	24
Registration	24
Veterans	24
Housing	25
Fees and Expenses	25
Bond Requirement	27
Student Health Service	27

Fellowships and Scholarships	28
CONTENT OF THE COURSES	29
Public Health Seminars	29
Biostatistics	30
Epidemiology	31
Industrial Hygiene	34
Maternal and Child Health	35
Nutrition	42
Physiology	44
Public Health Bacteriology	45
Public Health Practice	49
Sanitary Engineering	56
STUDENTS 1946-47	58
DEGREES CONFERRED IN 1947	60
SCHEDULE OF COURSES OFFERED IN 1947-48	64

CALENDAR FOR THE ACADEMIC YEAR 1947-48

*September 15, Monday to
September 19, Friday.*

Registration of students.

FALL TERM

First Period

September 22-November 15, 1947

Second Period

November 17, 1947-January 31, 1948

September 22, Monday.

Fall Term begins.

October 13, Monday.

Columbus Day: a holiday.

November 11, Tuesday.

Armistice Day: a holiday.

November 27, Thursday.

Thanksgiving Day: a holiday.

RECESS FROM DECEMBER 21, 1947 TO JANUARY 4, 1948, INCLUSIVE

SPRING TERM

Third Period

February 2-March 27, 1948

Fourth Period

April 5-June 10, 1948

February 2, Monday.

Spring Term begins.

February 23, Monday.

Washington's Birthday: a holiday.

RECESS FROM MARCH 28 TO APRIL 4, 1948, INCLUSIVE

April 19, Monday.

Patriots' Day: a holiday.

May 31, Monday.

Memorial Day: a holiday.

June 10, Thursday.

Commencement.

ADMINISTRATIVE OFFICERS

President: JAMES BRYANT CONANT, A.B., PH.D., LL.D., S.D., L.H.D.,
D.C.L., D.Sc.

Office, 1 Massachusetts Hall, Cambridge.

Dean: JAMES STEVENS SIMMONS, S.B., M.D., PH.D., DR.P.H.,
S.D. (hon.).

Office, School of Public Health, 55 Shattuck Street, Boston.

Assistant Dean: HUGO MUENCH, A.B., M.D., DR.P.H., A.M. (hon.).

Office, School of Public Health, 55 Shattuck Street, Boston.

Secretary of the School: MARGARET GUSS BARNABY, A.B.

Office, School of Public Health, 55 Shattuck Street, Boston.

Physician to Students: MYLES PIERCE BAKER, M.D.

Office, Room 103, Building A, Harvard Medical School,
25 Shattuck Street, Boston.

Bursar: ROY VINCELLE PERRY.

Office, Lehman Hall, Cambridge.

FACULTY OF PUBLIC HEALTH *

JAMES BRYANT CONANT, A.B., Ph.D., LL.D., S.D., L.H.D., D.C.L., D.Sc., *President.*

JAMES STEVENS SIMMONS, S.B., M.D., Ph.D., DR.P.H., S.D. (hon.), *Dean and Professor of Public Health.*

HUGO MUENCH, A.B., M.D., DR.P.H., A.M. (hon.), *Assistant Dean and Professor of Biostatistics.*

ALICE HAMILTON, M.D., A.M., S.D., *Assistant Professor of Industrial Medicine, Emeritus.*

FREDERICK FULLER RUSSELL, M.D., S.D. (hon.), *Professor of Preventive Medicine and Epidemiology, Emeritus.*

RICHARD PEARSON STRONG, Ph.B., M.D., S.D. (hon.), *Professor of Tropical Medicine, Emeritus.*

ERNEST EDWARD TYZZER, Ph.B., A.M., M.D., S.D. (hon.), *George Fabyan Professor of Comparative Pathology, Emeritus and Professor of Tropical Medicine, Emeritus.*

EDWIN BIDWELL WILSON, A.B., Ph.D., *Professor of Vital Statistics, Emeritus.*

RICHARD MASON SMITH, A.B., M.D., S.D. (hon.), *Thomas Morgan Rotch Professor of Pediatrics, Emeritus.*

MELVILLE CONLEY WHIPPLE, A.M. (hon.), *Associate Professor of Sanitary Chemistry.*

CECIL KENT DRINKER, S.B., M.D., S.D. (hon.), A.M. (hon.), *Professor of Physiology. (On leave of absence.)*

CONRAD WESSELHOEFT, M.D., *Clinical Professor of Infectious Diseases.*

CHARLES WALTER CLARKE, A.B., A.M., M.B.Ch.B., *Clinical Professor of Public Health Practice.*

HAROLD COE STUART, Litt.B., M.D., A.M. (hon.), *Professor of Maternal and Child Health.*

* Arranged, with the exception of the President and Deans, on the basis of collegiate seniority.

PHILIP DRINKER, S.B., Chem.E., S.D. (hon.), LL.D., A.M. (hon.),
Professor of Industrial Hygiene.

BERTHA SHAPLEY BURKE, A.B., A.M., *Assistant Professor of Maternal
and Child Nutrition.*

GORDON MASKEW FAIR, S.B., S.M., *Abbot and James Lawrence Pro-
fessor of Engineering and Gordon McKay Professor of Sani-
tary Engineering.*

JOHN EVERETT GORDON, S.B., Ph.D., M.D., A.M. (hon.), *Professor of
Preventive Medicine and Epidemiology.*

CONSTANTIN PRODROMOS YAGLOU, B.A., S.B., M.M.E., *Professor of In-
dustrial Hygiene.*

FRANZ GOLDMAN, M.D., *Associate Professor of Medical Care.*

CARL RUPP DOERING, A.B., M.D., S.D., *Assistant Professor of Bio-
statistics.*

HUGH RODMAN LEAVELL, S.B., M.D., Dr.P.H., *Professor of Public
Health Practice.*

SAMUEL BROWN KIRKWOOD, A.B., M.D., *Assistant Professor of Ma-
ternal Health.*

EDWARD WARREN MOORE, A.B., A.M., *Associate Professor of Sanitary
Chemistry.*

THEODORE HUNT INGALLS, A.B., M.D., *Associate in Epidemiology.*

EDWARD STEVENSON MURRAY, A.B., M.D., *Assistant Professor of Pub-
lic Health Bacteriology.*

JANE WORCESTER, A.B., Dr.P.H., *Assistant Professor of Biostatistics.*

FREDRICK JOHN STARE, S.M., Ph.D., M.D., *Professor of Nutrition.*

VLADO ANDREW GETTING, A.B., M.D., Dr.P.H., *Lecturer on Public
Health Practice.*

JOHN CRAYTON SNYDER, A.B., M.D., *Professor of Public Health Bac-
teriology.*

GEOFFREY EDSALL, M.D., *Assistant Professor of Public Health Bac-
teriology.*

JOHN CARRELL MORRIS, S.B., A.M., Ph.D., *Assistant Professor of Sanitary Chemistry.*

HAROLD ALLEN THOMAS, JR., S.B., S.M., S.D., *Associate Professor of Sanitary Engineering.*

SHIH LU CHANG, M.D., Dr.P.H., *Assistant Professor of Sanitary Biology.*

LESLIE SILVERMAN, S.B., S.M., S.D., *Assistant Professor of Industrial Hygiene.*

DAVID MARK HEGSTED, S.B., S.M., Ph.D., *Assistant Professor of Nutrition.*

STUART SHELTON STEVENSON, A.B., M.D., M.P.H., *Assistant Professor of Child Health.*

MARSHALL CLINTON, JR., A.B., A.M., M.D., *Associate in Industrial Hygiene.*

JAMES LAVERRE WHITTENBERGER, S.B., M.D., *Assistant Professor of Physiology.*

ROBERT KAYE, A.B., M.D., *Associate in Physiology.*

The names of the other officers of instruction are given in their respective departments as listed under Content of the Courses, pages 29-57.

ADMINISTRATIVE BOARD

JAMES B. CONANT, President (*ex officio*).

JAMES S. SIMMONS, Dean.

HUGH R. LEAVELL.

HUGO MUENCH, Assistant Dean.

JOHN C. SNYDER.

PHILIP DRINKER.

FREDRICK J. STARE.

GORDON M. FAIR.

HAROLD C. STUART.

JOHN E. GORDON.

JAMES L. WHITTENBERGER.

STUART S. STEVENSON, Secretary to the Board.

COMMITTEES OF THE FACULTY

Committee on Admissions

HUGO MUENCH, Chairman; MARSHALL CLINTON, JR., HUGH R. LEAVELL, JOHN C. SNYDER.

Committee on Degrees

HAROLD C. STUART, Chairman; PHILIP DRINKER, DAVID M. HEGSTED, JANE WORCESTER.

Committee on Examinations

HUGH R. LEAVELL, Chairman; CARL R. DOERING, FREDRICK J. STARE, STUART S. STEVENSON.

Committee on Curriculum

JOHN E. GORDON, Chairman; EDWARD W. MOORE, HUGO MUENCH, LESLIE SILVERMAN, JAMES L. WHITTENBERGER.

THE COMMITTEE APPOINTED BY THE BOARD OF OVERSEERS TO VISIT THE SCHOOL OF PUBLIC HEALTH

EDWARD B. KRUMBHAAR

ROBERT AMORY

CHARLES W. GILKEY

CHARLES H. BABCOCK

WILLIAM BELL

S. BRUCE BLACK

THOMAS D. CABOT

GEORGE B. DARLING

MARTHA M. ELIOT

FREDERICK W. HUBBELL

MARY W. LASKER

JOHN P. MARQUAND

EMORY W. MORRIS

BASIL O'CONNOR

THOMAS PARRAN

JAMES H. RAND, JR.

ANDREW J. WARREN

CHARLES F. WILINSKY

HUNTINGTON WILLIAMS

HISTORICAL STATEMENT

THE HARVARD SCHOOL OF PUBLIC HEALTH first gave instruction to students in the academic year 1922-23. Activity in professional education in public health had been steadily increasing in Harvard University over a period of more than two decades before the actual founding of the School as a result of the influence of Dr. Henry P. Walcott, for many years senior Fellow of the Harvard Corporation, himself an internationally known pioneer in the field of public health. This trend was a gradual development, but was characterized by certain important steps, the first of which was the establishment in 1909 of the Department of Preventive Medicine and Hygiene in the Medical School,—the first such department in the United States. The degree of Doctor of Public Health was first conferred in 1911. In this same year a Department of Sanitary Engineering was inaugurated in the Graduate School of Engineering. In 1913 the Department of Tropical Medicine, and in 1918 the Division of Industrial Hygiene, with clinical and laboratory facilities, were organized in the Harvard Medical School.

In 1913 the "Harvard-Technology" School of Public Health was organized, under the joint management of Harvard University and the Massachusetts Institute of Technology. This School operated until the fall of 1922, when it was superseded by the new Harvard School of Public Health which was made possible by a generous endowment for this purpose from the Rockefeller Foundation. This endowment is most appropriately known as the Henry P. Walcott Fund of Harvard University.

Besides the Walcott Fund, the Rockefeller Foundation at this time also presented the School with sufficient funds to purchase and equip a building standing on land adjacent to that occupied by the Medical School, the Children's Hospital and the Peter Bent Brigham Hospital in which to house the administrative offices and as many as possible of the various groups concerned with instruction and research in public health. It was impossible to provide space in the new School

of Public Health building for such departments as Bacteriology, Preventive Medicine and Hygiene, Tropical Medicine, Parasitology and the Library, all of which had existed in the Medical School for some years. For this reason, as well as to avoid duplication in facilities, the departments named above were organized as joint departments, supported financially by both the School of Public Health and the Medical School. There was a similar joint arrangement between the Graduate School of Engineering and the School of Public Health in respect to Sanitary Engineering. The departments which were entirely supported by the School of Public Health: Vital Statistics, Maternal and Child Health, Public Health Administration, Physiology and Industrial Hygiene, were either housed in the School of Public Health building or in quarters rented by the School.

In 1946, the Rockefeller Foundation made an additional grant to the School of Public Health of funds to be expended during the succeeding ten years. To provide additional space for the School, the Collis P. Huntington Memorial Hospital Building, located at Huntington Avenue and Shattuck Street, was made available. On July 1, 1946, the School of Public Health was separated administratively from the Medical School and became independent in respect to budgets and faculty appointments. The School continues to cooperate closely with the Medical School in teaching and research as it does with the School of Engineering and other Schools of the University.

GENERAL STATEMENT

PROGRAMS OF STUDY

The programs of study in the School of Public Health are based on the principle that a thorough training in the disciplines of the science of public health is essential to the success of the individual who practices or teaches public health, or who engages in research in this field. The School does not seek to prepare expert technicians for particular branches of departments of public health, although much of the instruction incidentally does familiarize students with many

specialized public health problems. The primary purpose of the School is to provide a better understanding of the nature and broad significance of public health, and of the specialties within this field, so that students may prepare themselves for careers as public health administrators, teachers, or research workers.

Programs of study are adapted to the needs of individual students. Special students, who are not candidates for degrees, who seek to prepare for work in a particular field, may concentrate in the broad field of problems in which their major interest lies. Those who complete the requirements for a first degree in public health with honor may devote most of their time to research directed toward the preparation of doctoral dissertations. These students may supplement and round out their previous graduate training through registering for courses offered in the other schools and departments of instruction in the University.

FACILITIES

The School of Public Health is located mainly in two buildings, one at 55 Shattuck Street, Boston, which houses the administrative offices and five departments, the other at 695 Huntington Avenue, Boston, where three departments are located. Both of these buildings are in close proximity to the Medical School, the School of Dental Medicine, the Peter Bent Brigham Hospital, the Children's Hospital, and the Lying-in Hospital. The Biologic Laboratories of the Massachusetts Department of Public Health are within a comparatively short distance of the School. There is a cooperative arrangement with the Medical School so that all the facilities of either School and of the hospitals are fully available to the students of both schools. In Cambridge the graduate departments of the University offer opportunities for work in certain fields of special interest to public health students. For example, students may elect courses in sociology, business administration, the theory of government, common law, sanitary engineering and other subjects.

Several types of well organized public health activities lie within a short distance of the School. Close affiliation is maintained between

the School and the Massachusetts Department of Public Health, thus assuring students an opportunity not only to observe but actually to participate under competent direction in state health department activities. The Health Departments of the City of Newton and of the Town of Brookline, whose Directors of Health are on the teaching staff of the School, have been developed as special training grounds for students of local public health administration in all its phases.

A cooperative field training project has been organized between the School of Public Health and the Massachusetts Department of Public Health by which students may register at the School of Public Health during the summer term and do field work in one or more of the health districts of the Massachusetts Department of Public Health, in the Biologic Laboratories of that Department, and in the health departments of Newton and Brookline. This field training is carefully supervised by the Commissioner of Public Health and by the Head of the Department of Public Health Practice of the School.

The facilities of the hospitals and clinics of the Massachusetts Department of Public Health and of other official agencies, as well as those of the various semi-official agencies, are available for field training in child health, tuberculosis control, treatment of contagious diseases of childhood, care of mental defectives, rehabilitation of crippled children, correction of dental defects, and other types of activity which relate directly to the promotion of health and social welfare. Opportunity is also offered for training in hospital administration under competent direction. Boston being the center of a great industrial metropolitan area, students have opportunity to observe at first hand all the public health problems that large industrial populations must face.

Libraries

The joint Library of the School of Public Health and the Harvard Medical School is on the second floor of the Administration Building of the Medical School. It is open from 9 A.M. until 10 P.M. on week days, from 9 A.M. until 5 P.M. on Saturdays, and from 2 P.M. until 6 P.M. on Sundays. There are at present 88,000 volumes, 199,000 pamphlets, and 833 current periodicals on file in this library.

Students also have the privilege of using the College Library in Cambridge, as well as the various departmental libraries belonging to the University, in all of which there are 3,945,318 volumes and pamphlets.

The Boston Public Library is open to students who are residents of Boston, and to students not residents of Boston who have filed a bond at the Bursar's Office.

The Boston Medical Library, No. 8 The Fenway, contains about 199,000 bound volumes, 135,000 pamphlets, and 578 current periodicals on file. For those who desire to consult medical literature, this very valuable library is open on week days from 9 A.M. to 5 P.M., and on Mondays and Thursdays until 10 P.M., from the middle of October to the end of May.

REQUIREMENTS FOR ADMISSION AND FOR DEGREES

Men or women who are applicants for admission to the School must satisfy the Committee on Admissions of their academic fitness. The record of courses completed as described in the application for admission is not in itself sufficient evidence of the fitness of a prospective candidate. The Committee may require additional evidence of present ability to utilize the training received and to profit by the courses administered by the School. The right is reserved to reject any applicant, or to accept an applicant as a special student rather than as a candidate for a degree until he demonstrates his ability to succeed in the work of the School.

All inquiries and communications regarding admission should be addressed to the Secretary, Harvard School of Public Health, 55 Shattuck Street, Boston 15, Massachusetts.

MASTER OF PUBLIC HEALTH

Requirements for Admission

The course leading to the degree of Master of Public Health is designed primarily for graduates in medicine, but it is also appropriate for doctors of dental or veterinary medicine and for public health workers who have received acceptable training or experience

in public health practice. Each applicant must convince the Committee on Admissions that he is prepared to complete the course with distinction.

Applicants for this degree must belong to one of the following categories:

1. Graduates of acceptable schools of medicine, veterinary medicine or dentistry.
2. Graduates in arts or sciences with adequate training in the basic medical sciences, who have completed either
 - a. One academic year of acceptable graduate work in a public health field, *or*
 - b. Three years of acceptable full-time experience in a responsible position in public health practice.

Requirements for the Degree

1. One academic year, consisting of two sixteen-week terms, must be spent in residence at the University.

2. The student must complete forty credit units with distinction. He may elect a larger number of courses but the program of work he desires to pursue must meet the approval of the Administrative Board. It is expected that candidates for the degree will take the basic courses in the fields of administration, statistics, sanitation and epidemiology, unless they can demonstrate equivalent preparation.

The courses of the curriculum are listed below, with the credit unit value for each course listed. These values indicate the approximate proportion of the student's total program the course is intended to occupy.

3. At the end of the academic year a comprehensive examination is given which is designed to test the student's knowledge and judgment, and his ability to coordinate the basic public health subjects of administration, epidemiology, sanitation and statistics, and also the various specialties in the field of public health. In order to be recommended for the degree of Master of Public Health the student must pass this examination with distinction.

<i>Fall Term</i>		
<i>Course</i>	<i>Title</i>	<i>Credit Units</i>
Biostatistics 1a, b	Principles of Biostatistics	4
Epidemiology 1b	Principles and Practice of Epidemiology	2
Epidemiology 5b	Special Problems in Infectious Diseases	.5
Industrial Hygiene 2a, b	Industrial Air Analysis	3
Maternal and Child Health 1a, b	Basic Problems	2.5
Maternal and Child Health 2a	Growth and Development	1
Maternal and Child Health 3b and Biostatistics 3b	Mortality and Morbidity in Infancy and Childhood	1
Maternal and Child Health 4a	Obstetrical Problems	.5
Maternal and Child Health 5b	Nutritional Problems	1
Nutrition 1a	Basic Nutrition	1.5
Nutrition 2b	Public Health Nutrition	1.5
Nutrition 4a, 4b	Journal Club	.5 each
Physiology 1a, b	Human Physiology and Its Application to Public Health	2
Public Health 1b	Evolution, Scope and Objectives of Public Health	1
Public Health Practice 1a	Principles of Public Health Practice	2
Public Health Practice 2b	Public Health Practice	2
Public Health Practice 5a	Organization of Medical Care	2
Public Health Practice 9a	Control of Cancer	1
Public Health Practice 10b	Psychosocial Problems	1
Public Health Practice 11b	Public Health History	.5
Sanitary Engineering 1a, b	Principles of Sanitation	5
Sanitary Engineering 2a, b	Sanitary Bacteriology	6

<i>Spring Term</i>		
<i>Course</i>	<i>Title</i>	<i>Credit Units</i>
Biostatistics 2c, d	Lectures on Statistical Analysis	2
Biostatistics 4c	Laboratory in Statistical Analysis	1
Biostatistics 5d	Laboratory in Statistical Analysis	1
Epidemiology 2c	Epidemiology of Acute Communicable Diseases of Temperate Climates	3
Epidemiology 3d	Epidemiology of Tropical and Exotic Diseases	2.5

Spring Term (continued)

<i>Course</i>	<i>Title</i>	<i>Credit Units</i>
Epidemiology 4c	Clinical Aspects of Infectious Diseases	1.5
Epidemiology 5c, 5d	Special Problems in Infectious Diseases	.5 each
Epidemiology 6c	Diseases Caused by Animal Parasites	2
Epidemiology 7d	Military Preventive Medicine	1
Industrial Hygiene 1c, d	Basic Problems in Industrial Hygiene	4
Industrial Hygiene 2c, d	Industrial Air Analysis	3
Industrial Hygiene 3d	Industrial Medical Care	1
Maternal and Child Health 1c	Administration of Maternal and Child Health Services	1.5
Maternal and Child Health 7c	School Health Problems	1
Maternal and Child Health 8c	Problems of Crippled and Handicapped Children	1
Maternal and Child Health 9c, 9d	Demonstrations of Maternal Health Services	1
Maternal and Child Health 10c, 10d	Demonstrations of Child Health Services	1
Maternal and Child Health 11d	Administration of Maternal and Newborn Health Services	1
Maternal and Child Health 12d	Administration of Infant and Child Health Services	1
Nutrition 3c, 3d	Techniques of Public Health Nutrition	2 each
Nutrition 4c, 4d	Journal Club	.5 each
Physiology 2d	Environmental Physiology	1
Public Health 1c, d	Evolution, Scope and Objectives of Public Health	2
Public Health Bacteriology 1c	Principles of Public Health Bacteriology and Immunology	2
Public Health Bacteriology 2d	Applied Immunology	1
Public Health Bacteriology 11c	Standard Public Health Laboratory Procedures	1.5
Public Health Practice 3d	Problems in Public Health Practice	1
Public Health Practice 4c	Voluntary Health Agencies	2
Public Health Practice 6c, d	Seminars in Medical Care	4
Public Health Practice 8d	Hospital Administration	2

<i>Course</i>	<i>Title</i>	<i>Credit Units</i>
Public Health Practice 12c	Control of Tuberculosis	2
Public Health Practice 13c	Administrative Problems	1
Public Health Practice 14d	Venereal Disease Control	3
Public Health Practice 15d	Health Education Problems	1
Sanitary Engineering 3c, d	Sanitary Parasitology	4.5

DOCTOR OF PUBLIC HEALTH

For the degree of Doctor of Public Health the student must complete an approved program of independent investigation and must present the results of this research in an acceptable thesis. In order to obtain the degree the student must show real ability for independent and original investigation in some special field.

Requirements for Admission

1. An applicant for admission to candidacy for this degree must be either (a) a graduate of an approved medical school, or (b) an individual lacking a medical degree who possesses exceptional basic training and experience in the field of public health.

2. One academic year in residence must have been devoted to the courses forming the curriculum for the degree of Master of Public Health. These courses must have been completed with honor. A student who has fulfilled the requirements for the Master of Public Health degree with honor elsewhere may be accepted provisionally as a candidate for the degree of Doctor of Public Health, final acceptance depending upon the progress of the work done by the student.

3. Before the applicant is admitted to candidacy for this degree, a special committee will be appointed to investigate his or her preparation in the chosen field and related fields of study, to pass upon the plan of the proposed thesis and to recommend whether the candidate is eligible to stand for the qualifying examination. This examination is oral, will cover the sciences basic to public health as well as the general course work represented by the M.P.H. degree, and is required of all candidates.

Requirements for the Degree

1. In exceptional cases the required work for the degree may be completed in one academic year of resident research, although, generally, the preparation of an acceptable thesis will require a longer period.
2. The Special Committee appointed to study the applicant's eligibility will continue to supervise his work. After completion of the thesis, the Special Committee will report to the Committee on Degrees upon its acceptability. Ordinarily the thesis must be submitted within five years of the candidate's acceptance.
3. If the thesis is accepted, the Chairman of the Committee on Examinations will conduct an oral examination by the faculty of Public Health on the thesis and on those public health subjects to which the thesis is related.
4. Two bound copies of the thesis must be deposited in the Dean's Office at least four weeks before the date on which the degree is to be conferred. Each copy must be accompanied by a summary not exceeding 1200 words in length, which shall indicate clearly the purposes, methods and results of the investigation.

MASTER OF SCIENCE IN HYGIENE

(With Designation of the Field of Concentration)

This degree is granted on fulfillment of a program of advanced work in one of the basic disciplines of public health. The courses taken must form an integrated plan of study in one branch of knowledge and allied subjects.

Requirements for Admission

Candidates for admission to the School of Public Health for the degree of Master of Science in Hygiene must fulfill the general requirements for admission to the School and must have received an academic degree with distinction from an institution of recognized standing.

Requirements for the Degree

1. Completion of a minimum of two years of graduate work, one of which must have been spent in residence.
2. The student must pursue a program of formal and seminar courses recommended by the Head of the Department in which the student wishes to concentrate. This program must include courses in public health (ordinarily Epidemiology, Biostatistics and Sanitary Engineering) and must be approved by the Committee on Degrees.
3. The student must complete his program of studies with honor grades. In addition he must pass with an honor grade a comprehensive examination in his principal and related fields of study.

DOCTOR OF SCIENCE IN HYGIENE

(With Designation of the Field of Concentration)

This degree is granted on successful completion of a program of independent research in one of the basic disciplines of public health, following broad and adequate preparation enabling the candidate to undertake the research problem.

Requirements for Admission

Candidates for the degree of Doctor of Science in Hygiene must fulfill the general requirements for admission to the School and must have completed the requirements for the degree of Master of Science in Hygiene.

Requirements for the Degree

1. Language requirements: The candidate must possess a reading knowledge of at least two languages, other than English, in which there exists a significant body of literature relevant to the candidate's field of study. This knowledge may be determined by examinations held ordinarily during the months of October and February of each year.
2. Qualifying examination: Before the applicant is admitted to candidacy for this degree, a special committee will be appointed to

examine his or her preparation in the chosen field and related fields of study. Ordinarily, this examination will be given one academic year before the applicant expects to receive the degree. At the discretion of the committee, the comprehensive examination for the degree of Master of Science in Hygiene, when passed with an honor grade, may be substituted for the qualifying examination.

3. Length of resident research: The degree of Doctor of Science in Hygiene is given on the basis of high attainment in a special branch of public health science. This must be evidenced by a minimum of one year of resident research, following admission to candidacy.

4. Thesis and final examination: A thesis showing original treatment of a fitting subject for research must be presented before admission to final examination for the degree. Two bound copies of the thesis must be deposited in the Dean's office four weeks before the date on which the degree is expected to be conferred. Each copy must be accompanied by a summary not exceeding 1200 words in length which shall indicate clearly the purposes, methods, and results of the investigation. The thesis must be approved by the committee before the candidate is permitted to take the final examination. This is usually oral and consists of detailed consideration of knowledge in the field of investigation and of work covered by the thesis.

SPECIAL STUDENTS

Applicants who do not meet the academic requirements for admission as candidates for degrees may be admitted to certain courses and programs of study at the discretion of the head of each department, and subject to conditions specified by him with the approval of the Committee on Admissions.

Students unable to spend a full academic year at the School may come for individual courses if their preparation for the course is approved by the head of the department.

As the capacity of the School is limited, and priority is given to degree candidates, the number of special students who can be ad-

mitted is dependent on the number of applicants who are accepted for the regular course. Therefore, it is not possible to know until early in the fall how many special students can be received.

MASTER OF EDUCATION IN THE FIELD OF PUBLIC HEALTH EDUCATION

The program in this field is offered cooperatively by the School of Public Health and the Graduate School of Education and is ordinarily divided equally between these two fields.

This program is designed for experienced teachers who desire to prepare for the work of the supervisor or director of public health education and for those eligible for the degree of Master of Public Health who seek to prepare for work in the field of dissemination of health information in a department of public health. Courses in the biological and physical sciences are prerequisite to the courses in public health. The standard program would be divided between the two schools as follows:

School of Public Health

Sanitary Engineering 1a, b
Nutrition 1a
Biostatistics 1a, b and Epidemiology 1b
Public Health Practice 1a and 5a
Maternal and Child Health 1a, b

School of Education

Educational Administration 1
Educational Administration 2
Educational Psychology 13
Social Relations 86 (under the Faculty of Arts and Sciences)

Two introductory courses drawn from:

Educational Psychology 1
Educational Measurement 1
Philosophy of Education 1

Secondary Education 1
Principles of Teaching 5

For further information write The Secretary, Graduate School of Education, Lawrence Hall, Cambridge 38, Massachusetts.

MASTER OR DOCTOR OF SCIENCE IN ENGINEERING

Graduates of engineering colleges or scientific schools of recognized standing who are interested in the sanitary engineering or industrial hygiene aspects of public health may be admitted to the Graduate School of Engineering as candidates for the degree of Master or Doctor of Science. They may elect any of the courses offered in the School of Public Health.

For further information write The Secretary, Graduate School of Engineering, Pierce Hall, Cambridge 38, Massachusetts.

GENERAL INFORMATION

Registration

Registration in the School of Public Health for the academic year 1947-48 is from Monday, September 15 to Friday, September 19. Adequate time should be allowed by the student for the discussion of his program with the Dean or Assistant Dean of the School, whose approval of each program is essential.

All students who are not citizens of the United States will be referred before registration to the Counsellor for Foreign Students, 24 Quincy Street, Cambridge, where they will present a statement of admission, show their passports, and fill out a Student Registration form. They will then receive a card for presentation at registration, showing they have been cleared by the office of the Counsellor for Foreign Students.

Veterans

Information about the procedure to be followed in applying for educational benefits under the G.I. Bill may be secured from the Secretary of the School or from the Counsellor for Veterans, Government Aid Department, Weld Hall, Cambridge.

Veterans must file with the Dean a form giving complete information concerning their discharge from the services. Admission of veterans to the School is subject to approval by the Department of Hygiene of the University.

Housing

There are no dormitories for School of Public Health students but they may get their meals at Vanderbilt Hall dining room, the Medical School dormitory. It is usually possible to find furnished rooms in hotels or private homes in the vicinity of the School, or in Brookline, a residential district within a short distance. The School will supply such information as can be secured about available quarters but the responsibility for obtaining quarters rests with the student. The University maintains a Room Registry for graduate students at Phillips Brooks House in Harvard Square, Cambridge. Applications for quarters for married students and their families are handled by the office of Hunneman and Company, 1416 Massachusetts Avenue, Cambridge. Students with families are advised to come at least three weeks in advance of registration and not to bring their families with them until living quarters are secured. Other students should plan to reach Boston at least a week in advance of registration.

Fees and Expenses

The fee for tuition for each term is \$285 for all full-time students. For part-time students the fee varies according to the courses taken and is based on the proportion of the annual fee for instruction which the credit units for each course bear to the total number of credits necessary for the degree of Master of Public Health, plus five dollars for each course. For example, a part-time student taking a course with a credit unit value of two would pay a tuition fee of \$33.50; a student taking a course with a credit unit value of four would pay \$62.

Each full-time student will be charged a Medical and Infirmary fee of \$15 per term. Part-time students working at the rate of substantially half-time or less and living at home may be excused by the

Bursar from the payment of such fee at any time within two weeks after their registration upon the recommendation of the Dean.

Bills for tuition and fees will be issued and payable as follows:

	<i>Issued</i>	<i>Payable</i>	
<i>Fall Term</i>	Sept. 22	Sept. 24	{ ½ of the tuition for the term Medical and Infirmary Fee for the term
	Nov. 20	Dec. 10	{ ½ of the tuition for the term Board through October 31 Miscellaneous charges
<i>Spring Term</i>	Jan. 20	Feb. 10	{ ½ of the tuition for the term Medical and Infirmary Fee for the term Board through December 31 Miscellaneous charges
	Feb. 2	Feb. 5*	{ ½ of the tuition for the term Medical and Infirmary Fee for the term
	March 20	Apr. 10	{ ½ of the tuition for the term Board through February 29 Miscellaneous charges
	June 2	June 9	{ Board to the end of the term Miscellaneous charges

Students who are candidates for degrees must have paid all dues to the University at least one day before the day upon which the degrees are to be voted. A student who leaves during the year is charged to the end of the tuition period in which he leaves provided before that time he gives the Dean notice in writing of his withdrawal; otherwise he is charged to the end of the tuition period in which such notice is given.

A student who leaves the University for any reason whatever must pay all charges against him immediately upon receipt of a bill

* Applies to entering students only.

from the Bursar. Every student will be held responsible for the payment of fees until he has notified the Dean of his intention to withdraw from the School.

All term bills will be sent to the student at his local address unless the Bursar is requested in writing to send them elsewhere.

Any student whose indebtedness to the University remains unpaid on the date fixed for payment is deprived of the privileges of the University until he is reinstated. Reinstatement is obtained only by consent of the Dean of the School in which the student is enrolled, after payment of all indebtedness and a late payment fee of \$10.00.

Bond Requirement

Upon entrance to the School every student is required to file with the Bursar a bond in the sum of \$500 as security for payment of University bills. The bond must be signed by two bondsmen, both of whom must be citizens of the United States, or by a surety company duly qualified to do business in Massachusetts. No officer or student of the University will be accepted as a bondsman and in no case will more than one parent be accepted. In lieu of the bond a student may deposit with the Bursar five hundred dollars in United States Treasury coupon-bearing bonds, or five hundred dollars in cash, which will bear no interest. Blank forms of bonds may be obtained at the Dean's Office or from the Bursar.

Student Health Service

In return for payment of the medical fee the School provides a physician to students who will give medical advice and treatment without charge during the school year. He is available to students for consultation at his office in Building A, Harvard Medical School, from 8.30 to 9.00 A.M., and from 4.30 to 6.00 P.M. daily except Saturdays and holidays. He may also be seen at other times by appointment and at any time in case of emergency. The fee also covers, when necessary, board and ordinary nursing care, for not more than a total of one week per term, in the Stillman Infirmary or in one of the teaching hospitals of the Medical School. There will be an extra

charge for private rooms, special nursing care, X-rays and special treatment. In addition, each student is entitled to all the medical and other services that have been organized under the Student Health Service plan of the University.

Any illness necessitating absence from work should be reported to the Student Health Office by the student, or by an attending physician.

Under the auspices of the Department of Medicine of the Harvard Medical School students paying the medical fee will be required to undergo a complete medical examination shortly after admission to the School.

Evidence of having been satisfactorily vaccinated is required for entrance to Harvard University and a form of certification for this purpose is sent to each student who is accepted for admission.

Fellowships and Scholarships

Certain fellowships and scholarships derived from special gifts to the University are open to students in the several departments of the University. They are administered by the Committee on General Scholarships, of which the Dean of the Faculty of Arts and Sciences is the Chairman. Application for any of these fellowships or scholarships must be made on a special form which may be obtained from the Chairman of the Committee on General Scholarships, 5 University Hall, Cambridge 38, Mass. Some of these fellowships and scholarships are granted to persons not previously members of the University, though preference is given, as a rule, to students who have already given evidence of their qualifications by work done in some department of the University. Appointments to fellowships and scholarships for any academic term are made, in most cases, by the Corporation, on recommendation of the Committee on Fellowships, at the beginning of the preceding academic term.

CONTENT OF THE COURSES OFFERED BY THE FACULTY OF PUBLIC HEALTH

PUBLIC HEALTH SEMINARS

JAMES S. SIMMONS, S.B., M.D., Ph.D., Dr.P.H., S.D. (hon.), *Dean and Professor of Public Health*, Members of the Faculty and Guest Lecturers.

Public Health 1b, 1c, d. The Evolution, Scope and Objectives of Public Health

Lectures and seminars. *Saturdays, 11-1, second, third and fourth periods.*
Dr. SIMMONS and associates.

Credit 3 units.

A series of 24 Seminars will be held on Saturday mornings during the second, third and fourth periods in order to afford an opportunity for the entire student body to meet with the Faculty and distinguished guest lecturers to consider in a broad way the evolution, scope and objectives of the profession of public health.

The modern practice of public health requires coordinated team work and the integrated action of experts trained in a number of different, though related, scientific fields. Proper emphasis is given to training in these special disciplines in the courses offered by the various departments including Sanitation, Public Health Bacteriology, Epidemiology, Public Health Parasitology and Tropical Medicine, Biostatistics, Physiology, Nutrition, Maternal and Child Health, Industrial Hygiene, and Public Health Practice. However, it is impossible for every student to take all the courses, and certain individuals may have no contact with one or more departments. These general public health seminars will have the advantage of cutting across departmental lines. They will give every student some contact with all sections of the School, and make it possible for him to learn something of the objectives and interests of each department and its relationship to public health as a whole.

The main purpose of these lectures and seminars is to help orient the student, to assist him in visualizing the wide field covered by his chosen profession, and to stimulate constructive thinking and planning for his future activities.

Some of the twenty-four sessions will be devoted to a broad survey of the historical development, the present status, and the future objectives of public health; some exercises will be conducted by Heads of the various departments of the School; and others will be given by guest lecturers.

DEPARTMENT OF BIOSTATISTICS

HUGO MUENCH, A.B., M.D., Dr.P.H., A.M. (hon.), *Professor of Biostatistics and Head of the Department.*

CARL R. DOERING, A.B., M.D., S.D., *Assistant Professor of Biostatistics.*

JANE WORCESTER, A.B., Dr.P.H., *Assistant Professor of Biostatistics.*

ROBERT B. REED, A.B., A.M., *Research Associate in Biostatistics.*

Biostatistics 1a, b. Principles of Biostatistics

Lectures. *Mondays and Fridays, 12-1, first period; Mondays and Wednesdays, 12-1, second period.* Laboratory work. *Mondays and Fridays, 2-5, first and second periods.* Dr. MUENCH, Dr. DOERING and Dr. WORCESTER.

Credit 4 units.

This course is designed to cover the basic principles of statistical method as applied to biology in general and to public health problems in particular. Subjects presented will include collection, tabulation and elementary analysis of data; measures of center and of dispersion; and sampling from populations. During the second period, laboratory work will be designed to supplement material presented in Epidemiology 1b.

Biostatistics 2c, d. Statistical Analysis

Lectures. *Tuesdays and Thursdays, 10-11, third and fourth periods.* Dr. MUENCH, Dr. DOERING and Dr. WORCESTER.

Credit 2 units.

The lectures will cover a range of topics of interest to the student and research worker in biological fields. The course is designed as a unit and must be elected for both periods.

Prerequisite: Biostatistics 1a, b, or equivalent.

Biostatistics 3b and Maternal and Child Health 3b. Mortality and Morbidity in Infancy and Childhood

Seminars. *Wednesdays, 3-5, second period.* Dr. MUENCH, Dr. STUART and associates.

Credit 1 unit.

This course is given jointly by the Departments of Biostatistics and of Maternal and Child Health. See Maternal and Child Health 3b.

Biostatistics 4c. Statistical Analysis

Conferences and laboratory. *Tuesdays and Thursdays, 11-1, third period.* Dr. MUENCH and associates.

Credit 1 unit.

The laboratory work will supplement the material covered in lectures during the first half of Biostatistics 2 and is intended to give facility in the performance of statistical analyses. The course may not be elected without Biostatistics 2, but may be taken independently of Biostatistics 5d.

Biostatistics 5d. Statistical Analysis

Conferences and laboratory. *Mondays and Fridays, 11-1, fourth period.* Dr. MUENCH and associates.

Credit 1 unit.

The laboratory work will supplement the material of the last half of Biostatistics 2, which must be taken concurrently. This course may be elected without Biostatistics 4c.

Biostatistics 20. Biostatistical Research

Time and credit to be arranged according to amount of work done.

Reading and research in selected topics of biostatistics by students specializing in this field or those who desire supervision in working out a statistical problem in their own special field of interest.

DEPARTMENT OF EPIDEMIOLOGY

JOHN E. GORDON, S.B., Ph.D., M.D., A.M. (hon.), F.R.C.P. (Lond.), *Professor of Preventive Medicine and Epidemiology and Head of the Department.*

CONRAD WESSELHOEFT, M.D., *Clinical Professor of Infectious Diseases.*

THEODORE H. INGALLS, A.B., M.D., *Associate in Epidemiology.*

JOHN J. POUTAS, A.B., M.D., M.P.H., *Instructor in Epidemiology.*

A. DANIEL RUBENSTEIN, A.B., M.D., M.P.H., *Instructor in Epidemiology.*

HUGH L. C. WILKERSON, B.S., M.D., M.P.H., *Research Fellow in Epidemiology.*

W. LLOYD AYCOCK, M.D., *Associate Professor of Preventive Medicine and Hygiene.*

LOUIS WEINSTEIN, S.M., Ph.D., M.D., *Instructor in Infectious Diseases.*

Division of Parasitology and Tropical Medicine

DONALD L. AUGUSTINE, S.D., D.Sc. (hon.), A.M. (hon.), *Associate Professor of Comparative Pathology and Tropical Medicine.*

QUENTIN M. GEIMAN, S.M., Ph.D., *Assistant Professor of Tropical Diseases.*

ALBERT A. HORNOR, A.B., M.D., *Instructor in Tropical Diseases.*

Epidemiology 1b. Principles and Practice of Epidemiology

Lectures, laboratory and seminars. *Mondays, 11-12 and 2-5, Fridays, 11-1, second period; Wednesdays, 12-1, last half of second period.* Dr. GORDON and associates. Given jointly with Biostatistics 1b.

Credit 2 units.

An introduction to epidemiology, presenting the principles, historical development and methods of epidemiologic investigation. Current and classical illustrations of epidemic and endemic prevalence are used to demonstrate the factors governing infection, disease and immunity in population groups. Selected problems dealing with the investigation and control of communicable and non-communicable disease illustrate the application of the epidemiologic method to public health practice.

Prerequisite: Biostatistics 1a, b.

Epidemiology 2c. Epidemiology of Acute Communicable Diseases of Temperate Climates

Lectures, conferences and laboratory exercises. *Mondays and Wednesdays, 10-1, Fridays, 10-12, third period.* Dr. GORDON and associates.

Credit 3 units.

A conference and laboratory course dealing with the specific epidemiological characteristics of the acute communicable diseases of temperate climates. The laboratory work demonstrates the field methods used in collection, analysis and interpretation of data derived from epidemic and endemic situations. Modes of infection are defined and the laws of epidemics examined. The correlation of clinical, field and laboratory procedures is emphasized in the development and evaluation of programs for the prevention of disease and the management of epidemics.

Prerequisite: Epidemiology 1b.

Epidemiology 3d. Epidemiology of Tropical and Exotic Diseases

Lectures, laboratory exercises, seminars and demonstrations. *Tuesdays and Thursdays, 2-5, fourth period.* Dr. GORDON, Dr. AUGUSTINE and associates.

Credit 2.5 units.

A joint course by the Departments of Epidemiology and Parasitology designed to cover the broader aspects of tropical and exotic diseases. The agency of insects and other arthropods in the transmission of disease receives special consideration. Diseases of bacterial, viral and protozoal nature are presented as epidemiologic problems with special attention to prevention and control.

Courses 3d and 6c constitute a sequence and ordinarily will be elected together. Under exceptional circumstances, and with the approval of the instructor, either may be taken independently.

Epidemiology 4c. Clinical Aspects of Infectious Diseases

Lectures, demonstrations, clinics and conferences. *Wednesdays and Fridays, 9-10, Clinics, Fridays, 3-5, third period.* Dr. WESSELHOEFT and associates.

Credit 1.5 units.

The care and management of patients with acute infectious diseases is presented with special reference to the problems of the epidemiologist and health officer. Diagnostic methods, isolation of patients in home and hospitals, and modern methods of treatment are presented and discussed.

Epidemiology 5b, 5c, 5d. Special Problems in Infectious Diseases

Seminars and clinics. *Saturdays, 9-11, second, third and fourth periods.* Dr. WESSELHOEFT and associates.

Credit .5 unit in each period.

An advanced course in clinical infectious diseases dealing with selected topics based on available clinical material at the Haynes Memorial Hospital.

Epidemiology 6c. Diseases Caused by Animal Parasites

Lectures, seminars, laboratory exercises and demonstrations. *Tuesdays and Thursdays, 2-5, third period.* Dr. AUGUSTINE, Dr. GORDON and associates.

Credit 2 units.

This course covers the important parasitic diseases of man from the public health viewpoint. The geographical distribution of these parasites, their mode of transmission and methods of prevention and control are studied. Clinical aspects and chemotherapy of parasitic diseases are discussed. Special emphasis is given to methods of laboratory diagnosis and to the study of host-parasite reactions in experimental animals.

Courses 6c and 3d constitute a sequence and ordinarily will be elected together. Under exceptional circumstances, and with the approval of the instructor, either may be taken independently.

Epidemiology 7d. Military Preventive Medicine

Seminars. *Wednesdays, 11-1, fourth period.* Dr. GORDON and Dean SIMMONS.

Credit 1 unit.

A series of seminars, conferences and demonstrations concerned with administrative and professional problems in military preventive medicine. Designed primarily for students from the military services. Admission by permission of the instructor.

Epidemiology 20. Research in Epidemiology

Properly qualified workers may be assigned problems in the several fields of the Department of Epidemiology or may be aided in the development of their own interests. Qualified students are offered the opportunity to undertake special studies in Parasitology and Tropical Medicine. Fundamental research on problems relating to tropical diseases may be arranged and opportunities are at times afforded for investigators engaged on special problems to work in laboratories of hospitals situated within the tropics, or to cooperate in field investigations.

DEPARTMENT OF INDUSTRIAL HYGIENE

PHILIP DRINKER, S.B., Chem.E., S.D. (hon.), LL.D., A.M. (hon.), *Professor of Industrial Hygiene and Head of the Department.*

CONSTANTIN P. YAGLOU, B.A., S.B., M.M.E., *Professor of Industrial Hygiene.*

LESLIE SILVERMAN, S.B., S.M., S.D., *Assistant Professor of Industrial Hygiene.*

MARSHALL CLINTON, JR., A.B., A.M., M.D., *Associate in Industrial Hygiene.*

CHARLES R. WILLIAMS, Ph.D., *Instructor in Industrial Hygiene.*

THOMAS L. SHIPMAN, Ph.B., M.D., *Instructor in Industrial Hygiene.*

EMMA S. TOUSANT, LL.B., *Instructor in Industrial Hygiene.*

HARRIET L. HARDY, M.D., *Instructor in Industrial Hygiene.*

HENRY C. MARBLE, A.B., M.D., *Assistant in Industrial Hygiene.*

ROBERT M. THOMSON, *Assistant in Industrial Hygiene.*

C. GUY LANE, A.B., M.D., *Clinical Professor of Dermatology.*

ERICH LINDEMANN, Ph.D., M.D., *Associate in Psychiatry.*

Industrial Hygiene 1c, d. Basic Problems in Industrial Hygiene

Lectures and demonstrations. *Mondays and Fridays, 2-4, third period and first month of fourth period. Field trips, eight Wednesdays, 1:30-5, dates to be announced.* Professor DRINKER, Dr. CLINTON and associates.

Credit 4 units.

A course of lectures, demonstrations, clinics, and inspections showing the relation of working conditions to health, with special reference to the elimination of industrial hazards, the prevention and treatment of industrial disabilities and diseases, and the conservation of health of industrial workers.

Industrial Hygiene 2a, b and 2c, d. Industrial Air Analysis

Laboratory work. *Tuesdays and Thursdays, 2-5, fall and spring terms.* Dr. SILVERMAN and Dr. WILLIAMS.

Credit 3 units in each term.

Laboratory exercises in measuring airflow, in appraising air conditioning and ventilating installations, in determining and identifying atmospheric impurities, and in making toxicologic analyses of importance in industrial medical problems.

Industrial Hygiene 3d. Industrial Medical Care

Conferences and clinics. *Mondays and Wednesdays, 2-4, Fridays, 2-3, second month of fourth period.* Dr. CLINTON and Dr. HARDY.

Credit 1 unit.

Special instruction in pathology and laboratory diagnosis of industrial diseases, clinical conferences and clinic visits. Limited to physicians specializing in Industrial Hygiene.

Engineering 441a. Heating and Ventilation

Lectures. *Mondays and Wednesdays, 8:30-10, fall term, at Pierce Hall, Cambridge.* Professor YAGLOU.

The theory and practice of heating and ventilating. For engineers.

Engineering 441b. Air Conditioning

Lectures. *Mondays and Wednesdays, 8:30-10, spring term, at Pierce Hall, Cambridge.* Professor YAGLOU.

The theory and practice of air conditioning. For engineers.

Industrial Hygiene 4d. Industrial Ventilation

Lectures and problems. *Mondays, Wednesdays and Fridays, 2-4, second month of fourth period.* Dr. SILVERMAN.

Design, operation and appraisal of industrial ventilation systems. For engineers.

Industrial Hygiene 20. Research

A limited number of qualified students will be given an opportunity to do research work in industrial hygiene, including industrial hazards, toxicology, heating and ventilating, and air conditioning, by arrangement with the Head of the Department.

DEPARTMENT OF MATERNAL AND CHILD HEALTH

HAROLD C. STUART, Litt.B., M.D., A.M. (hon.), *Professor of Maternal and Child Health and Head of the Department.*

BERTHA S. BURKE, A.B., A.M., *Assistant Professor of Maternal and Child Nutrition.*

SAMUEL B. KIRKWOOD, A.B., M.D., *Assistant Professor of Maternal Health.*
STUART S. STEVENSON, A.B., M.D., M.P.H., *Assistant Professor of Child Health.*
KATHLEEN SCOBIE, S.B., S.M., *Research Fellow in Maternal and Child Health.*
RUTH MARIE GAESSLER, S.B., *Assistant in Maternal and Child Health.*
OLIVE MAE LOMBARD, B.Sc., *Research Fellow in Maternal and Child Health.*
KENNETH L. PHILLIPS, M.D., *Research Fellow in Maternal and Child Health.*

CHARLES A. JANEWAY, A.B., M.D., *Thomas Morgan Rotch Professor of Pediatrics.*

WILLIAM T. GREEN, A.M., M.D., *Clinical Professor of Orthopedic Surgery.*

CLEMENT A. SMITH, M.D., *Assistant Professor of Pediatrics.*

STEWART H. CLIFFORD, M.D., *Instructor in Pediatrics.*

The public health problems and activities which concern a division of maternal and child health have to do with many fields of science. Some of these relate to the health and welfare of all age groups, but are of particular importance to the infant or the child. Others are problems of early life only, or require special services for these age groups. Still others relate only to the health of women during the child bearing period. Since this range of subjects is very broad, the Department gives little attention to those problems pertaining to health which are more fully considered by other departments of the school. On the other hand, the special problems peculiar to maternity and childhood are considered even though they may relate to the general fields of other departments. Thus the special aspects of diet during pregnancy and lactation, infant feeding, and diet at succeeding periods of childhood are emphasized. Communicable diseases commonly occurring in childhood are not studied in all aspects, but immunization procedures and environmental control measures particularly applicable in early life are discussed. Administrative procedures for the conduct of special maternal and child health services are given special consideration, in close collaboration with the Department of Public Health Practice.

It is highly desirable that students interested in maternal and child health enroll for introductory courses in nutrition and epidemiology, as well as for the basic public health subjects, and that they then take as many of the courses offered by this Department as time permits. It is also desirable that these students elect the field observation provided by the Department during the year and arrange for field training in a maternal and child health unit of government after completion of the academic year, if this experience has not been obtained previously.

The Department offers two introductory lecture courses, intended for all

students desiring broad understanding and general orientation as to the problems and procedures of public health. These courses should also be taken by those who are particularly interested in maternal and child health. In addition, the Department offers eight seminar courses, two demonstration courses, three field training programs and an individual project course. These are so distributed throughout the year that all may be taken by students majoring in this field, while also taking general courses in basic public health subjects offered by other departments. In the seminar courses, student participation in the discussions is encouraged, and experience is afforded in presenting the current status of important maternal or child health subjects.

Maternal and Child Health 1a, b. Basic Problems

Lectures. *Tuesdays and Thursdays, 9-10, first period; Mondays, Wednesdays and Fridays, 10-11, second period.* Dr. STUART, Dr. KIRKWOOD, Prof. BURKE and Dr. STEVENSON.

Credit 2.5 units.

Part 1a deals with maternal, fetal and neonatal problems. These include the physiological changes which accompany pregnancy and the nutritional and other requirements of this period; the complications of pregnancy, labor, delivery and the puerperium; maternal mortality; abortions, stillbirths and neonatal deaths. They include also the physiological changes and pathological occurrences of the neonatal period and the care of prematurely born infants as well as normal full term infants. With this background of knowledge as to the preventive measures required, the health services suited to a maternal care program are presented in connection with the preconceptional, prenatal, natal and postnatal periods.

Part 1b considers the health problems of infancy, childhood and adolescence, and the public health services designed to deal with them. These include the major causes of death and the health problems of each age period, and the preventive measures applicable to them. The special needs of physically, mentally and socially handicapped as well as normal children are considered.

Maternal and Child Health 1c. Administration of Maternal and Child Health Services

Lectures. *Tuesdays, Thursdays and Fridays, 12-1, third period.* Dr. LEAVELL, Dr. KIRKWOOD, Dr. STUART and associates.

Credit 1.5 units.

This course will be given jointly with the Department of Public Health Practice. It considers the methods and organization of public health and preventive medical services, which have been found to operate to best advantage under different circumstances, for the protection of pregnant women and of children of all ages. These subjects will be considered under the principal

headings of prenatal care, delivery and newborn services, infant and preschool services and school services, with special attention under each to medical, nursing, nutrition and social services and education programs in connection with hospitals, clinics or schools. Finally, the overall administration of a Department of Maternal and Child Health in different units of Government will be considered.

Maternal and Child Health 2a. Growth and Development

Seminars and demonstrations. *Wednesdays, 3-5, first period.* Dr. STUART, Dr. STEVENSON and associates.

Credit 1 unit.

This course is given in the first two months as it provides basic information regarding the normal child and a useful background for all the courses given by this Department. The physical growth and development of the infant, the child and the adolescent are studied from the standpoints of their relations to health requirements and health problems. Mental development and emotional characteristics are also considered. The problems of individual differences and normal variability are given much attention since they must be understood if health examinations are to accomplish more than to discover pathology. The methods of appraisal and recording of data relating to growth and development are studied and evaluated.

Maternal and Child Health 3b and Biostatistics 3b. Mortality and Morbidity in Infancy and Childhood

Seminars. *Wednesdays, 3-5, second period.* Dr. STUART, Dr. MUENCH and associates.

Credit 1 unit.

This course will be given jointly with the Department of Biostatistics. It deals with the relative importance of different causes of death and illness under varying circumstances of race, age, and environment and with the progress thus far made in reducing individual rates. The purpose is to provide a better understanding of the extent and nature of the leading problems of maternal and child health.

Maternal and Child Health 4a. Obstetrical Problems

Seminars. *Saturdays, 8:30-10, first period.* Dr. KIRKWOOD and associates.

Credit .5 unit.

This course will enlarge upon the basic clinical problems touched upon in the lecture course under 1a, and will deal with recent advances in clinical obstetrics and gynecology. It is intended as a method of bringing the student abreast of the present clinical problems so that he may better judge the caliber of the work performed by the practitioners of his region. Major matters for

discussion will include the following: obstetrical hemorrhage, toxemia, infection, dystocia, x-ray pelvimetry, caesarean section, medical complications of pregnancy, the mechanism of prolapse, tumors of the generative organs, hormone therapy and nutritional problems. All of this material will be related to maternal health services as they operate today and as they may develop in the future.

Maternal and Child Health 5b. Nutritional Problems

Seminars. *Tuesdays, 2-4, second period.* Prof. BURKE, Dr. STEVENSON and associates.

Credit 1 unit.

Nutritional requirements are reviewed from the standpoints of growth, development and general wellbeing during infancy, childhood and adolescence. The ways of meeting these requirements under normal conditions are discussed. Special problems in practical feeding are dealt with which arise from dependency, immaturity, socio-economic circumstances, parental inadequacies and psychological factors. The diet of the mother in preparation for and during lactation, breast feeding, artificial feeding, the formation of good habits and attitudes toward food, as well as the detection and management of malnutrition in children are further subjects considered. This course should be of particular value to those interested in nutrition although intended for all students majoring in maternal and child health. It is planned as a background for the further study of community problems and nutrition services in relation to infants, children and adolescents.

Maternal and Child Health 7c. School Health Problems

Seminars. *Tuesdays, 2-4, third period.* Dr. STEVENSON and associates.

Credit 1 unit.

This course will consider the School Health Program from the standpoints of health education, environmental supervision, the control of communicable disease, and the individual preventive medical care of the child. Current methods will be criticized in the light of recent re-evaluations of the aims and limitations of the program.

Maternal and Child Health 8c. Problems of Crippled and Handicapped Children

Seminars. *Thursdays, 2-4, third period.* Dr. ———, Dr. STUART and associates.

Credit 1 unit.

The various broad groups of children who present problems requiring special services will be considered. These include mentally, neurologically and orthopedically crippled children and those with cardiac and other defects, as

well as the dependent and neglected. The content and organization of these services and their integration with regular health programs will be presented in as far as possible by specialists from these respective fields as well as by members of the staff of the department.

Maternal and Child Health 9c and 9d. Demonstrations of Maternal Health Services

Demonstrations. *Thursdays, 10-12, third period and repeated if necessary Thursdays, 9-11, in the fourth period.* Dr. KIRKWOOD and associates.

Credit 1 unit.

Each section will be limited to twelve students.

Field work in maternal health is offered at the Boston Lying-in Hospital, at the South Boston Clinic of the Boston Lying-in Hospital, at the Free Hospital for Women in Brookline and at the Florence Crittenton Maternity Home. Demonstrated in the course are current solutions to the problems involved in supplying complete prenatal, natal, and postnatal services to the community through a home delivery organization, through a small community hospital, and through a large medical center. The handling of gynecological problems as the logical extension of postnatal services is likewise shown.

Maternal and Child Health 10c and 10d. Demonstrations of Child Health Services

Demonstrations. *Mondays, 2-4, third period and repeated if necessary in the fourth period.* Dr. STUART, Dr. STEVENSON and associates.

Credit 1 unit.

Each section will be limited to twenty students.

Demonstrations will include infant and preschool child health conferences of the City of Boston Health Department at the Children's Hospital, school health services in the parochial schools of Brookline and other special child health services.

Maternal and Child Health 11d. Administration of Maternal and New-born Health Services

Seminars. *Tuesdays, 2-4, fourth period.* Dr. ———, Dr. KIRKWOOD and associates.

Credit 1 unit.

This course is given conjointly with the Department of Public Health Practice, and is concerned with the administrative aspects of the services provided for these special groups. It will include the physical set-up of the prenatal clinic, the proper construction of the maternity hospital or the maternity ward of a general hospital, the postpartum and gynecological clinic,

the provision of consultation services, the provision of complete maternal health services for economically marginal areas, the care of the unmarried mother, the problem of adoption, maternity benefit and insurance programs, the use of the public health nurse and nutritionist in maternal health work, the home delivery service, the midwifery service, and postgraduate education for the practitioner and the nurse.

Maternal and Child Health 12d. Administration of Infant and Child Health Services

Seminars. *Tuesdays and Thursdays, 11-12, fourth period.* Dr. ———, Dr. LEAVELL and associates.

Credit 1 unit.

This course will be given jointly with the Department of Public Health Practice. The administrative aspects of all child health services will be considered in relation to different areas and types of communities. The organization and administration of infant and child health conferences, school health services, services for crippled and other handicapped children, nursing services, dental services, nutrition services, etc., as parts of a general public health program will be studied.

Maternal and Child Health 13b, 14c and 15d

Field trips for training in maternal and child health services. Dr. ——— and associates.

Credit .5 unit for each three day trip.

Three field trips, each of three days' duration, will be arranged during the periods in January, April and June in which no classes are held at the school. Students electing these field exercises will have opportunities to see special programs for maternal and child health in operation under Departments of Health and to participate in practical problems of service and administration discussions with members of these departments.

Maternal and Child Health 20

Students majoring in Maternal and Child Health will have an opportunity to do individual work for credit under instructor guidance on problems relating to this special field. Each program will be arranged in conference between student and instructor and must be accepted in advance by the head of the department. In general such programs will include review of the literature on the subject selected, clinical observations including some original work and a paper reporting the work done. This work may be done during the second, third or fourth period, depending upon the subject chosen and its relation to the courses of instruction taken. Permission to take Course 20 will be granted

only to those who pass with distinction the scheduled courses in this field during the preceding period.

DEPARTMENT OF NUTRITION

FREDRICK J. STARE, S.B., S.M., Ph.D., M.D., *Professor of Nutrition and Head of the Department.*

DAVID M. HEGSTED, S.B., S.M., Ph.D., *Assistant Professor of Nutrition.*

ELIZABETH K. CASO, S.B., S.M., *Instructor in Nutrition.*

ROBERT E. OLSON, A.B., Ph.D., *Instructor in Nutrition.*

GEORGE V. MANN, A.B., Sc.D., M.D., *Research Fellow in Nutrition.*

ROBERT P. GEYER, A.B., Ph.D., *Research Fellow in Nutrition.*

DONALD M. WATKIN, A.B., M.D., *Research Fellow in Nutrition.*

ANDROMACHE G. TSONGAS, S.B., M.P.H., *Assistant in Nutrition.* (On leave of absence.)

ELIZABETH A. LOCKWOOD, A.B., A.M., M.P.H., *Research Fellow in Nutrition.*

KATHRYN A. TEW, S.M., *Assistant in Nutrition.*

A. BAIRD HASTINGS, S.B., Ph.D., S.D., *Hamilton Kuhn Professor of Biological Chemistry.*

JAMES H. SHAW, S.B., S.M., Ph.D., *Instructor in Nutrition.*

Nutrition 1a. Basic Nutrition

Lectures. *Mondays, Wednesdays and Fridays, 9-10, first period.* Dr. STARE and associates.

Credit 1.5 units.

This course deals with the fundamentals of the chemistry and physiology of nutrition. Among the subjects discussed are history and development of the science of nutrition, energy metabolism and requirements; protein, mineral, and vitamin metabolism; acid-base balance of the body; physiology of digestion; intermediary metabolism; and vitamin-enzyme-hormone relationships.

Nutrition 2b. Public Health Nutrition

Lectures. *Mondays, Wednesdays and Fridays, 9-10, second period.* Dr. STARE and associates.

Credit 1.5 units.

This course deals with the practical application of the science of nutrition to the problems of human nutrition, especially in the field of public health. Dietary requirements are considered in their relation to growth, development,

disease, pregnancy, lactation, and the formation and maintenance of dental structures. Methods for establishing the minimum and optimum nutritional requirements, together with the problems of meeting these requirements, especially for low income groups are discussed. Methods of taking nutritional histories and the use of physical and chemical methods for evaluating the nutritional state of individuals or large groups are presented with special emphasis on nutritional surveys of population groups. The place of the nutritionist in the public health program is considered and various fields of a well-rounded nutrition service are discussed as it correlates with the activities of health, welfare, educational and industrial organizations. The principles of diet therapy are taught. The effect of various environmental, social, economic, and psychological factors upon food habits is also studied as they influence the nutritional status of an individual or group of people. The consequences of nutritional deficiencies and the relation of optimum nutrition to national and international health and economy are discussed. The nutritional problems of relief, rehabilitation, famine, and other emergencies are dealt with. The relation of production, distribution and preparation for the best use of foods is discussed, as are also the problems of food enrichment and fortification.

Nutrition 3c, 3d. Techniques of Public Health Nutrition

Seminars. *Mondays and Fridays, 2-4, third and fourth periods.* Dr. STARE and Mrs. CASO.

Credit 2 units in each period.

The purpose of this seminar course is to give the student a more complete picture of the various phases of public health nutrition work and an opportunity to develop some of the techniques for nutrition education. The following subjects are considered: techniques and procedures for organizing and conducting a nutrition service; nutrition work with health, welfare, educational, industrial and institutional organizations; the study of factors affecting food habits; techniques of individual and group instruction; preparation and criticism of nutrition educational materials—exhibits, pamphlets, newspaper articles, radio talks, etc.; review and criticism of current books on nutrition and related subjects.

Additional time and credit for field work may be arranged for individual students. The Department of Nutrition participates in Community Nutrition Programs in various Boston suburbs and has excellent field facilities in community nutrition.

Prerequisite: Nutrition 1a and 2b or equivalent.

Nutrition 4a, 4b, 4c, 4d. Journal Club

Seminars. *Tuesdays, 4-5, during all four periods.* Dr. STARE and associates.

Credit .5 unit in each period.

Brief discussions of current literature in fundamental and applied nutrition and assigned topics.

Prerequisite: Nutrition 1a or its equivalent. Admission limited and subject to the approval of the instructor.

Nutrition 20. Advanced Nutrition

Time (at least 2 half days per week) and credit to be arranged. *Fall and spring terms.* Dr. STARE and associates.

Facilities are available for advanced work in nutrition along the following lines: fundamental research in nutrition, laboratory methods in nutrition, applied nutrition in public health and medicine, applied nutrition in food management and service.

Prerequisite: Nutrition 1a and 2b or the equivalent. Admission limited and subject to the approval of the instructor.

DEPARTMENT OF PHYSIOLOGY

CECIL K. DRINKER, S.B., M.D., S.D. (hon.), A.M. (hon.), *Professor of Physiology and Head of the Department.* (On leave of absence.)

JAMES L. WHITTENBERGER, S.B., M.D., *Assistant Professor of Physiology and Acting Head of the Department.*

ROBERT KAYE, A.B., M.D., *Associate in Physiology.*

ESTHER HARDENBERGH, A.B., A.M., *Instructor in Physiology.*

THORNE M. CARPENTER, S.B., Ph.D., *Research Associate in Physiology.*

Physiology 1a, b. Human Physiology and Its Application to Public Health

Lectures and demonstrations. *Tuesdays and Thursdays, 12-1, first period, Tuesdays and Thursdays, 10-11, second period.* Dr. WHITTENBERGER, Dr. KAYE and Miss HARDENBERGH.

Credit 2 units.

A course in human physiology, with particular emphasis on the systems and reactions of the body which are of major importance in public health problems. The course is designed primarily for students of sanitary engineering; it is recommended also to those who need a physiological background for work in other fields. The course is prerequisite to Physiology 2d for those who lack adequate training in physiology.

Physiology 2d. Environmental Physiology

Lectures. *Tuesdays and Thursdays, 12-1, fourth period.* Dr. WHITTENBERGER and associates.

Credit 1 unit.

It is the effort of sanitary engineering and industrial preventive medicine to provide living and working conditions safe and tolerable for man all over the world and under many different circumstances. The human organism reacts characteristically to many changes in physical environment, to chemical changes in the atmosphere, and to alterations in food supply. In every instance large groups of people are involved and a reasonable knowledge of the principles of public health thus requires realization of the effects of the commoner environmental conditions met by man. These are heat, cold, humidity, alterations in barometric pressure, radiation, contamination of the atmosphere by smoke, dusts, and chemicals, and changes in diet.

The course will consist of lectures, conferences and demonstrations covering the reaction caused by the varieties of human experience.

Prerequisite: Physiology 1a, b or its equivalent. Admission subject to the approval of the instructor.

Physiology 20. Research in Physiology

Properly qualified students will be given opportunities to work in the laboratory provided they can spend at least four months of undivided time.

DEPARTMENT OF PUBLIC HEALTH BACTERIOLOGY

JOHN C. SNYDER, A.B., M.D., *Professor of Public Health Bacteriology and Head of the Department.*

GEOFFREY EDSALL, M.D., *Assistant Professor of Public Health Bacteriology and Director of the Division of Biologic Laboratories, Department of Public Health of Massachusetts.*

EDWARD S. MURRAY, A.B., M.D., *Assistant Professor of Public Health Bacteriology.*

JAMES A. McCOMB, D.V.M., *Instructor in Public Health Bacteriology and Assistant Director of the Division of Biologic Laboratories, Department of Public Health of Massachusetts.*

JOHN M. NEWELL, A.B., ScD., *Instructor in Public Health Bacteriology and Senior Chemist, Division of Biologic Laboratories, Department of Public Health of Massachusetts.*

MARIANNA R. BOVARNICK, A.B., Ph.D., *Research Associate in Public Health Bacteriology.*

ESMOND G. LEWIS, M.B.B.Ch., *Research Fellow in Public Health Bacteriology.*

J. HOWARD MUELLER, S.M., Ph.D., A.M. (hon.), *Charles Wilder Professor of Bacteriology and Immunology.*

JOHN F. ENDERS, Ph.D., *Associate Professor of Bacteriology and Immunology.*

F. SARGENT CHEEVER, A.B., M.D., *Silas Arnold Houghton Assistant Professor of Bacteriology and Immunology.*

MAX BOVARNICK, A.B., M.D., Ph.D., *Assistant Professor of Bacteriology and Immunology.*

ROBERT N. NYE, A.B., M.D., *Assistant Professor of Bacteriology and Immunology.*

ROBERT A. MACCREADY, S.B., M.D., *Instructor in Bacteriology and Immunology and Assistant Director of the Division of Communicable Diseases, Department of Public Health of Massachusetts.*

WILLIAM A. HINTON, S.B., M.D., *Lecturer on Bacteriology and Immunology and Chief of Wassermann Laboratory, Department of Public Health of Massachusetts.*

JOHN H. HANKS, M.D., *Lecturer on Bacteriology and Immunology.*

HERBERT R. MORGAN, M.A., M.D., *Research Fellow in Medicine.*

The students in the School of Public Health may be considered in three categories as regards their previous training in bacteriology.

(a) Students who have had extensive experience in bacteriology and who are familiar with the principles and standard methods. The regularly scheduled courses in the School of Public Health are not designed for this group. However, several opportunities for advanced training are available. By arrangement with the Massachusetts Department of Public Health, students may study in the Wassermann Laboratory, in the Diagnostic Laboratory, and in the Biologics Laboratory. Courses in various aspects of sanitary bacteriology are given by the Harvard University Graduate School of Engineering. Suitably qualified students may wish to take courses in the Harvard Medical School, such as Bacteriology A (section for graduate students); Bacteriology 32, Immunity and Serology; Bacteriology 33b, Clinical Bacteriology; Bacteriology 34, Viruses. These courses are described in detail in the official register of the Harvard Medical School.

(b) Students whose background in bacteriology is negligible. In this group are those students whose previous instruction in bacteriology was received many years before their matriculation in the School of Public Health, and whose activities have not brought them into contact with the developments in bacteriology. Also in this group are the students whose previous instruction in bacteriology was incomplete or unsatisfactory for various reasons. This group is advised to take a basic course in bacteriology and immunology such as Bacteriology A, Harvard Medical School, or Sanitary Engineering 2a, b (Sanitary Bacteriology) given at the Graduate School of Engineering, or a similar course elsewhere.

Candidates for the degree of Master of Public Health who fall in this category are required to take a basic course in bacteriology before being granted their degrees.

(c) Students who have had satisfactory instruction in bacteriology but who have not had subsequently extensive experience in the field. Most of the candidates for the degree of Master of Public Health belong in this group. The regularly scheduled courses in bacteriology in the School of Public Health are designed primarily for these students.

Public Health Bacteriology 1c. Principles of Public Health Bacteriology and Immunology

Lectures and demonstrations. *Mondays, Tuesdays, Thursdays and Saturdays, 9-10, third period.* Dr. SNYDER, Dr. MURRAY and associates.

Credit 2 units.

This course considers the pathogenic bacteria, viruses, rickettsiae, and fungi with emphasis on recent developments of importance in public health. The principles of bacteriology and immunology are discussed in relation to the problems of public health. The course is recommended particularly for students who may be engaged in activities related to the field of communicable diseases.

Prerequisite: Medical Bacteriology; Sanitary Engineering 1a, b.

Public Health Bacteriology 2d. Applied Immunology

Lectures and laboratory work. *Fridays, 2-5, fourth period.* Massachusetts Biologics Laboratory. Dr. EDSALL and associates.

Credit 1 unit.

The application of immunological theory to the prevention and treatment of disease, as evidenced in the manufacture of serums, vaccines, and related products, is developed by lectures, discussions and laboratory demonstrations. The content of the course is dependent upon the training and interests of students. Opportunities are also offered for study of and training in the manufacture of biologic products or for original work in problems related to these processes, at times to be arranged individually.

Public Health Bacteriology 3c, 3d. Laboratory Tests for Syphilis

Conferences and laboratory work. Time and credit to be arranged. Dr. HINTON.

A short course in theoretical and practical aspects of serologic tests for syphilis is open to selected students at the Wassermann Laboratory of the Massachusetts Department of Public Health. The relation of laboratory methods to epidemiologic studies and to programs of control receive special consideration.

This course is intended for students who desire more advanced instruction in techniques of serologic tests and darkfield examinations than that included in Public Health Bacteriology 11c.

Public Health Bacteriology 11c. Standard Public Health Laboratory Procedures

Limited to 24 students who are taking course 1c. *Mondays and Fridays, 2-4, Saturdays, 10-11, third period.* Drs. SNYDER, MURRAY, CHANG, HINTON and MACCREADY.

Credit 1.5 units.

This course demonstrates laboratory methods and techniques of importance in public health. The students perform a few standard bacteriologic procedures. Exercises include darkfield examinations, serologic tests for syphilis and other diseases, the isolation and identification of representative pathogenic agents, and the bacteriologic examination of milk, water, and food. The students are not expected to acquire ability to perform laboratory procedures expertly. Rather the course is designed to illustrate the standard public health laboratory procedures, with special reference to potentialities and shortcomings.

The course is recommended particularly for students whose activities in the field of public health are likely to involve them in various relationships with public health laboratories. The course does not offer technical training of the sort needed by persons who will be engaged primarily in laboratory work.

Public Health Bacteriology 20. Research

Properly qualified students may do research in bacteriology by arrangement with the head of the Department.

Public Health Bacteriology 30. Field Training

Suitably qualified students, by arrangement with the head of the Department may spend the designated period of field training in observation of the operation of the three institutions of the Massachusetts Department of Public Health as indicated below. The purpose of this field training is to permit the students to become familiar with the organization and administration of the bacteriologic diagnostic laboratory, the serologic laboratory for the diagnosis of syphilis, and the biologics laboratory. The problems of these institutions and the techniques employed will be demonstrated to the students.

	{	Diagnostic Laboratory
Jan. 26-31	{	Wassermann Laboratory
	{	Biologics Laboratory

Students may elect to visit any one or all of these institutions.

DEPARTMENT OF PUBLIC HEALTH PRACTICE

HUGH R. LEAVELL, S.B., M.D., Dr.P.H., *Professor of Public Health Practice and Head of the Department.*

C. WALTER CLARKE, A.B., A.M., M.B.Ch.B., *Clinical Professor of Public Health Practice.*

FRANZ GOLDMANN, M.D., *Associate Professor of Medical Care.*

VLADO A. GETTING, A.B., M.D., Dr.P.H., *Lecturer on Public Health Practice and Commissioner of Public Health, Department of Public Health of Massachusetts.*

FRANCES M. FRAZIER, S.B., R.N., M.P.H., *Instructor in Public Health Nursing.*

HELEN L. ROBERTS, A.B., M.D., M.P.H., *Instructor in Public Health Practice.*

ALTON S. POPE, A.B., M.D., Dr.P.H., *Instructor in Public Health Practice and Deputy Commissioner, Department of Public Health of Massachusetts.*

ROY F. FEEMSTER, A.B., M.D., M.P.H., *Instructor in Public Health Practice and Director, Division of Administration, Department of Public Health of Massachusetts.*

HERBERT L. LOMBARD, A.B., M.D., M.P.H., *Instructor in Public Health Practice and Director, Division of Cancer and Other Chronic Diseases, Department of Public Health of Massachusetts.*

NORBERT A. WILHELM, M.D., *Instructor in Public Health Practice and Director, Peter Bent Brigham Hospital.*

ERNEST M. MORRIS, A.B., M.D., M.P.H., *Instructor in Public Health Practice and Director of Public Health, City of Newton, Massachusetts.*

ROBERT E. ARCHIBALD, M.D., M.P.H., *Instructor in Public Health Practice and Director, Division of Local Health Administration, Department of Public Health of Massachusetts.*

ARTHUR E. BURKE, S.B., M.D., *Instructor in Public Health Practice and District Health Officer, Department of Public Health of Massachusetts.*

LOREN D. MOORE, M.D., *Instructor in Public Health Practice and Assistant Director, Division of Biologic Laboratories, Department of Public Health of Massachusetts.*

ALFRED L. FRECHETTE, M.D., M.P.H., *Instructor in Public Health Practice and Health Officer, Town of Brookline, Massachusetts.*

THEODORE ROSENTHAL, S.B., M.D., *Instructor in Public Health Practice and Director, Bureau of Social Hygiene, New York City Department of Health.*

STANLEY COBB, A.B., M.D., *Bullard Professor of Neuropathology.*

JAMES M. DUNNING, A.B., D.D.S., M.P.H., *Dean, Harvard School of Dental Medicine.*

PAUL K. LOSCH, D.D.S., *Assistant Professor of Clinical Dentistry.*

SHIELDS WARREN, A.B., M.D., *Assistant Professor of Pathology.*

F. WILLIAM MARLOW, JR., S.B., M.D., *Associate in Medicine.*

Public Health Practice 1a. Principles of Public Health Practice

Lectures. *Mondays and Wednesdays, 10-12, first period.* Dr. LEAVELL and associates.

Credit 2 units.

The principles of administrative organization and procedure are now sufficiently well established to serve as a basis upon which public health practice can be founded. The complexity of modern communities makes it essential for workers in the health field to understand the organizational structure of government and the community in order to work effectively with other departments at various governmental levels and with voluntary agencies.

This course provides discussion of the basic principles of public administration, organization, personnel management, public health law, budgeting, community organization and health organization.

Public Health Practice 2b. Public Health Practice

Seminars, conferences and field observations. *Tuesdays and Thursdays, 9-11, second period.* Dr. LEAVELL and associates.

Credit 2 units.

Discussions and some details of public health organization at the various governmental levels. The so-called basic public health activities are emphasized particularly, including vital statistics, communicable disease control, maternal and child care, sanitation, public health laboratory services, health education and adult health services. Opportunities are provided for brief field observations of the more important activities. Discussions by specialists in the various fields are included with special emphasis on administrative problems and techniques.

Public Health Practice 3d. Problems in Public Health Practice

Seminars, *Tuesdays, 2-4, fourth period.* Dr. FRECHETTE.

Credit 1 unit.

The case method of presenting problems in the field of public health administration is employed, using situations from field experience to illustrate problems and to serve as basis for discussion of applied public health administration. Students are assigned problems to study and report upon to the class.

Such problems include those encountered in the work of state and local health departments associated for field training purposes with the School of Public Health.

Public Health Practice 4c. Voluntary Health Agencies

Seminars, *Mondays and Wednesdays, 10-12, third period.* Dr. LEAVELL and associates.

Credit 2 units.

The voluntary health agencies play a large and important part in the field of public health because of their diverse nature, objectives, methods of administration and fund raising. Examples of the various principal types of voluntary agencies are discussed in some detail. Representatives of the voluntary agencies at the national, state and local levels contribute to the discussions.

This course is designed to provide those who expect to be public health administrators with some knowledge of how voluntary health agencies operate and also to give those who expect to work in voluntary health agencies some orientation in the field.

Public Health Practice 5a. Organization of Medical Care

Lectures and discussions. *Tuesdays and Thursdays, 2-4, first period.* Dr. GOLDMANN.

Credit 2 units.

An orientation course on the development and present state of medical care programs organized under the auspices of public and voluntary agencies. Discussion of the resources in medical and related personnel in hospitals, clinics and custodial institutions; of the utilization of existing services and the cost of medical care; and of the basic methods of organizing and paying for professional and hospital services. Description of tax supported medical care programs administered by local, state and federal agencies and of voluntary prepayment plans of various types.

Public Health Practice 6c, d. Seminars in Medical Care

Seminars, field observations and exercises. *Tuesdays and Thursdays, 10-12, third period; Tuesdays and Thursdays, 9-11, fourth period.* Dr. GOLDMANN.

Credit 4 units.

An advanced seminar enlarging on the basic subject matter presented in Public Health Practice 5a, Organization of Medical Care. Designed primarily for students who wish to specialize in medical care. Discussion of the basic principles and problems of sound administrative organization of medical care programs. Study of the administrative practices actually followed by public agencies in charge of tax supported services and by voluntary agencies administering prepayment plans for hospital care, physicians' service, or both.

Discussion of the techniques of surveying and appraising medical care needs and medical care programs. Analysis of the experience gained in the operation of various types of tax supported and insurance plans. Visits to selected medical care facilities and to administrative agencies, public and voluntary. Supervised studies of typical organizations.

Public Health Practice 8d. Hospital Administration

Seminars and field exercises. *Mondays and Fridays, 11-1, fourth period.* *Field trips to be arranged.* Dr. WILHELM. This course will not be given for less than ten students.

Credit 2 units.

There is a growing trend for the local health officer to be either responsible for city or county hospital management or directly concerned with it. This course has been developed to cover the major problems of hospital administration from the viewpoint of the health officer. No attempt is made to develop hospital administrators, therefore emphasis is on fundamental problems rather than on the details of hospital administration.

Public Health Practice 9a. Control of Cancer

Lectures and discussions. *Fridays, 10-12, first period.* Dr. WARREN. This course will not be given for less than ten students.

Credit 1 unit.

Cancer control is discussed from the viewpoint of the administrator rather than the epidemiologist or the specialist. Authorities in the various aspects of the cancer control program are invited to discuss special phases of the problem.

Public Health Practice 10b. Psychosocial Problems

Lectures and seminars. *Saturdays, 9-11, second period.* Dr. COBB and associates.

Credit 1 unit.

This course is concerned with the study of abnormal behavior resulting in social problems and with the mechanisms which produce abnormal mental reactions. Methods of handling these problems through community resources are discussed.

Public Health Practice 11b. Public Health History

Seminars. *Wednesdays, 11-12, second period.* Dr. LEAVELL and associates.

Credit .5 unit.

The growth of the modern health unit, particularly in the Anglo-Saxon countries is discussed. Cultural, social and economic forces which have influenced the movement are studied in relationship to the evolution of the science of public health.

Public Health Practice 12c. Control of Tuberculosis

Lectures and field exercises. *Tuesdays and Thursdays, 2-4, third period.*

Credit 2 units.

Control measures applicable to public health practice are discussed. The approach is that of the administrator rather than the specialist, although specialists in various aspects of tuberculosis control will lead some of the discussions. Field trips include visits to hospitals, mass chest survey projects, tuberculosis clinics, etc.

Public Health Practice 13c. Administrative Problems

Seminars. *Saturdays, 9-11, third period.* Dr. LEAVELL and associates.

Credit 1 unit.

The administration of the modern health department involves many problems of business management and administrative techniques. Problems of budgeting, personnel, public relations, use of office machines and problems in office management are considered in this course through the discussion technique.

Public Health Practice 14d. Venereal Disease Control

Lectures, demonstrations and discussions. *Mondays, Wednesdays and Fridays, 9-11, fourth period.* Dr. CLARKE.

Credit 3 units.

This course presents, first, the basic medical data regarding syphilis, gonorrhea, chancroid, granuloma inguinale and lymphogranuloma venereum as communicable diseases, and second, their epidemiology, prevention and administrative control. During the first part of the course the subject matter is presented by means of lectures, motion pictures, slides and clinical demonstrations. The second part is devoted to lectures and class discussions of practical problems involved in the public health control of venereal diseases.

Clinics

Clinical instruction in syphilis at the Peter Bent Brigham Hospital. *Wednesdays, 6-8 P.M., and Thursdays, 1-3 P.M.* Dr. MARLOW.

These clinics are available during the entire year to all public health students; those who are planning to do public health work in this field are expected to spend considerable time in them and to participate in the work.

Credit units according to amount of work done.

Clinical instruction in gonorrhea at the Peter Bent Brigham Hospital. *Mondays through Saturdays, 8:30-11:30 A.M.*

These clinics, while especially designed for students whose major interest is the control of the venereal diseases, are also available to other students.

Credit units according to amount of work done.

Laboratory Tests for Syphilis. Dr. HINTON. See page 47.

Public Health Practice 15d. Health Education Problems

Seminars and demonstrations. *Saturdays, 9-11, fourth period.*

Credit 1 unit.

Discussion of the educational and psychological principles involved in health education and community organization. Demonstration of principal techniques involved in health education through various media, such as printed matter, radio, newspapers, exhibits, etc.

Public Health Practice 16d. Conferences in Hospital Administration

Fourth period. Time and credit to be arranged. Dr. WILHELM. Limited to five students.

This course is designed for students who elect Public Health Practice 8d and for certain others who are interested in attending daily administrative conferences at the Peter Bent Brigham Hospital.

Public Health Practice 17c and 17d. Dental Public Health Practice

Conferences, seminars and field exercises. Time and credit to be arranged. Dr. DUNNING and associates.

Graduates in dentistry who are accepted as candidates for the degree of Master of Public Health are required to take the basic courses which are prescribed for that degree. They are assumed to have had adequate training and experience in all phases of clinical dentistry but as additional experience, opportunities are provided in the Forsyth Infirmary and in the Harvard School of Dental Medicine.

Opportunities for field work in public health dentistry are provided in the Massachusetts Department of Public Health and in the Health Department of the City of Newton.

Public Health Practice 18. Public Health Nursing

Seminars. Hours and credit to be arranged. Miss FRAZIER.

Discussion of advanced problems in public health nursing with particular reference to integration in the program of official and voluntary health agencies.

Public Health Practice 20. Research

Advanced students are offered the opportunity to undertake special studies in Public Health Practice. The student must have completed Biostatistics 1a, b and Public Health Practice 1a before registering for this work.

*Field Work in Public Health Practice***Public Health Practice 30b and 30c**

Field Work in Local Health Department. *January 26-30 and March 29-April 2.*

Credit 1 unit each.

Opportunity to spend a continuous period in a well operated local or district health department observing activities of the various subdivisions, work of the health officer and relationships with the community, with discussions and reports. Only a few students can be accommodated in any one department at a given time. Specific arrangements for this course must be made well in advance of the dates scheduled.

Public Health Practice 31b

Field Work in State Health Department. *January 26-30.*

Credit 1 unit.

A continuous period is spent in observing the operations of the subdivisions of the Massachusetts State Health Department, supplemented by planned discussions and reports. Since only a limited number of students can be included, specific arrangements must be made in advance.

Public Health Practice 32c

Field Work in Health Agencies of New York City. *March 29-31.*

Credit .5 unit.

Visits to voluntary health agency members of the National Health Council, the New York City Department of Health, the Industrial Hygiene Division of the New York State Department of Labor, one or more district health centers and other health activities of special interest in New York City.

Public Health Practice 33b, c and d

Field Work — Medical Care Agencies. Time and credit to be arranged.

Planned visits to voluntary and official agencies concerned with provision of medical care to various segments of the population, discussion of observations and reports.

Public Health Practice 34d

Field Work — Venereal Disease Control. Time and credit to be arranged.

Field work in the Bureau of Social Hygiene, City of New York Department of Health. Dr. CLARKE, with the assistance of officers of the New York City Department of Health, Bureau of Social Hygiene.

DEPARTMENT OF SANITARY ENGINEERING

GORDON M. FAIR, S.B., S.M., *Abbot and James Lawrence Professor of Engineering, Gordon McKay Professor of Sanitary Engineering and Head of the Department.*

MELVILLE C. WHIPPLE, A.M. (hon.), *Associate Professor of Sanitary Chemistry.*

EDWARD W. MOORE, A.B., A.M., *Associate Professor of Sanitary Chemistry.*

J. CARRELL MORRIS, S.B., A.M., Ph.D., *Assistant Professor of Sanitary Chemistry.*

SHIH L. CHANG, M.D., Dr.P.H., *Assistant Professor of Sanitary Biology.*

HAROLD A. THOMAS, JR., S.B., S.M., S.D., *Associate Professor of Sanitary Engineering.*

Sanitary Engineering 1a, b. Principles of Sanitation

Lectures and demonstrations. *Tuesdays, Thursdays and Saturdays, 10-12, first period.* Professor FAIR and Assoc. Professor MOORE. *Tuesdays and Thursdays, 11-1, second period.* Professors DRINKER and YAGLOU, Assoc. Professor MOORE, Asst. Professors CHANG and SILVERMAN.

Credit 5 units.

This course is designed to cover the principles of sanitation that underlie the control of the environment by engineering means for the purpose of preserving and promoting the public health. The topics considered include: Water Supply—collection, purification, and distribution; Sewerage—collection, treatment, and disposal; Analysis of Water and Sewage—physical, chemical, and biological; Garbage and Refuse—collection and disposal; Housing; Rural Sanitation; and Sanitation of Schools, Camps, and Bathing Places.

In the second period, the topics include Food Sanitation—production, preservation, distribution, and preparation; Milk Sanitation; Shellfish Sanitation; Biological Control—insects and rodents; Ventilation—air supply, purification, conditioning; Noise—appraisal, control; Illumination—appraisal, control.

Sanitary Engineering 2a, b. Sanitary Bacteriology

Lectures and laboratory. *Summer term, first half, Mondays through Fridays, 1:30-5:30; first and second periods, Mondays, Wednesdays and Fridays, 2-5.* Asst. Professor CHANG.

Credit 6 units.

Morphology, physiology, cultivation, and identification of bacteria. Effect of physical, chemical and antibiotic agents on bacteria. Mechanism and dynamics of disinfection and bacteriostasis. Biochemical study of enteric bacteria. Immunity and antigen and antibody reactions. Bacteriology, bacteriological analysis, and sanitary control of air, dairy products, food, eating estab-

lishments, shellfish, swimming pools, and water. Microbiology of sewage and sewage treatment.

This is the same course as Engineering 411a.

Sanitary Engineering 2c, d. Advanced Sanitary Bacteriology

Conferences and laboratory. *Third and fourth periods.* Time and credit to be arranged. Asst. Professor CHANG.

Experimental studies of metabolism of nitrification and nitrogen-fixation bacteria. *Thiobacillus*; *Zooglea ramigera*; and protozoa. Studies of oxygen utilization in activated sludge process under various conditions. Bacteriophage.

This is the same course as Engineering 411b.

Sanitary Engineering 3c, d. Sanitary Parasitology

Lectures and laboratory. *Third and fourth periods, Mondays, Wednesdays and Fridays at 9, and Fridays, 2-5.* Asst. Professor CHANG.

Credit 4.5 units.

Life cycle and ecology of animal parasites of public health significance and medical entomology, with special emphasis on environmental control.

This is the same course as Engineering 413b.

The following courses of instruction offered in the Graduate School of Engineering are open to properly qualified students:

Engineering 400a. Water Supply, Sewerage, and Waste Disposal. Professor FAIR.

Engineering 400b. Water and Sewage Treatment Works. Professor FAIR.

Engineering 410a. Examination of Water and Sewage. Associate Professor WHIPPLE.

Engineering 412a, 412b and 414a. Engineering Chemistry. Asst. Professor MORRIS.

Engineering 430b. Theory of Water and Sewage Treatment. Associate Professor MOORE.

Engineering 431b. Experiments in Water and Sewage Treatment. Associate Professor WHIPPLE.

Engineering 432a. Industrial Wastes and Municipal Refuse. Associate Professor MOORE.

Engineering 433b. Stream Sanitation. Associate Professors MOORE and THOMAS.

Engineering 434a. Industrial Water Supplies. Associate Professor MOORE.

STUDENTS 1946-47

CANDIDATES FOR THE DEGREE OF DOCTOR OF PUBLIC HEALTH

Banton, Huston J., S.B., M.D., M.P.H.	West Roxbury, Mass.
Budnik Boroda, Emilio, M.D., M.P.H.	Santiago, Chile
Lockwood, Elizabeth A., S.B., A.M.	Ithaca, N. Y.
Wilkerson, Hugh L. C., S.B., M.D., M.P.H.	East Milton, Mass.

CANDIDATES FOR THE DEGREE OF MASTER OF PUBLIC HEALTH

Atienza, Romeo Y., M.D.	Manila, P. I.
Berry, Ralph B., S.B., M.D.	Yankton, S. Dak.
Bhatt, Mahendra J., M.B.B.S.	Bhavnagar, India
Bill, Audrey A., A.B., M.D., M.P.H.	Wayland, Mass.
Brown, Mary L., S.B.	Nashville, Tenn.
Buker, John N., D.V.M.	Akron, Ohio
Byer, Maurice A., M.B., Ch.B.	St. Lucia, B.W.I.
Callison, Robert L., A.B., M.D.	Washington, D. C.
Cheney, Lucile L., A.B.	Augusta, Maine
Chou, Erh F., M.D.	Kiangsu, China
Colby, Edward W., S.B., M.D.	Pembroke, N. H.
Conlin, John F., A.B., M.D.	Boston, Mass.
deForest, Walter R., A.B., M.D.	Montclair, N. J.
Dunning, James M., A.B., D.D.S.	Cambridge, Mass.
Escarrá, Enrique J. M., M.D.	Buenos Aires, Argentina
Eyestone, Willard H., S.B., D.V.M.	Pittsburg, Kans.
Fiumara, Nicholas J., A.B., M.D.	Roslindale, Mass.
Frazier, Frances M., S.B.	Harrisonburg, Va.
Horton, Robert J. M., A.B., M.D.	Cleveland Heights, Ohio
Hudson, Harry H., M.D.	Nashville, Tenn.
Ipsen, Johannes, M.D., Ph.D.	Copenhagen, Denmark
Jeffers, Clark P., S.B., M.D.	Lombard, Ill.
Kenny, George A., Ph.B., S.M.	Warwick Neck, R. I.
Klauber, Samuel, M.D.	Cuchillo, N. M.
Koo, Shyue C., M.D.	Shanghai, China
Leonard, Alvin R., M.D.	San Francisco, Calif.
Lewy, Frederick J., M.D.	New York, N. Y.
Lindberg, Walter A., M.D.	Oslo, Norway
Matthews, Anne R., S.B., S.M.	Worton, Md.
Mollohan, Cecil S., M.D.	Denver, Colorado
Morhouse, Charles H., Ph.B., S.M., M.D.	Washington, D. C.
Muller, Jan, M.D.	Prague, Czechoslovakia
Nichols, Marion E., S.B.	Waban, Mass.

CANDIDATES FOR THE DEGREE OF MASTER OF PUBLIC HEALTH (continued)

Nielsen, Gertrude, M.D.	Norman, Okla.
Notkin, Herbert, A.B., M.D.	San Francisco, Calif.
O'Mahony, Joseph P., M.B., Ch.B.	St. Kitts, B.W.I.
Peatfield, Norman E., A.B., M.D.	So. Hamilton, Mass.
Peters, Ella L., M.D.	Winkler, Man., Canada
Philp, John R., A.B., M.D.	Pasadena, Calif.
Press, Edward, A.B., M.D.	Englishtown, N. J.
Rajamanikkam, Hannah M., M.B.B.S., B.S.Sc.	Madras, India
Rajasingham, Ponniah, L.M.S.	Badulla, Ceylon
Rhoades, Mervin G., S.B., D.V.M.	Los Angeles, Calif.
Santiago, Urcicio, M.D.	Bahia, Brazil
Shu, Chang Y., M.B., Ch.B.	Nanking, China
Sinha, Shivarajnandan P., M.B.B.S., D.P.H.	Patna, Bihar, India
Starin, Irving, S.B., M.D.	Bronx, N. Y.
Teng, I-Wei, M.B.	Changsha, China
Tiruchelvam, Raphael L., L.M.S., D.T.M.&H., D.P.H.	Colombo, Ceylon
Trulson, Martha F., S.B.	Stoughton, Wis.
VanSant, Willard M., D.V.M.	Davis, Calif.
Wellock, William D., D.M.D.	Newton, Mass.
Zindwer, Renée, M.D.	Roslindale, Mass.

FULL-TIME SPECIAL STUDENTS

Adisubramaniam, Tarakad S., M.B.B.S., B.S.Sc.	Madras, India
Anderson, Charles R., A.B., M.D.	New York, N. Y.
Charalampous, Frixos C., M.D.	Ktima Papho, Cyprus
Cheng, Jenin, M.B.B.S., Ph.D.	Nanking, China
Collins, Gretchen E., S.B.	Magnolia, Miss.
Cubillos, Luisa E., M.D.	Valparaiso, Chile
Derryberry, Mildred M., S.B.	Jackson, Miss.
Donoso Torres, Maria L., M.D.	La Paz, Bolivia
Farooq, Mohammad, B.Sc., M.B.B.S.	Golconda, India
Grant, Wemyss G., M.B.B.S.	Melbourne, Australia
Hagan, Gladys C., S.B.	Dorchester, Mass.
Hsieh, Chin K., B.M.	Shanghai, China
Hu, Nai C., B.Pharm.	Shanghai, China
Hudnall, Mildred G., S.B.	Livingston, Ala.
Light, Anna M., S.B., A.M.	State College, Pa.
Ling, Chiun-Tong, M.D., M.P.H.	Shanghai, China
Nuila, Buenaventura N., M.D.	Cojutepeque, El Salvador

Oyanguren, Hernan M., M.D.	Santiago, Chile
Rehn, John W. H., S.B.	Philadelphia, Pa.
Riggs, Thomas R., S.B., S.M.	Dallas, Oregon
Sarma, Padubidri S., B.Sc., M.Sc., Ph.D.	Coonor, S. India
Shoib, Mohamed O., M.B.B.Ch.	Cairo, Egypt
Wang, Cheng-Fa, M.B., Ch.B.	Nanking, China
Wold, Karin M.	Oslo, Norway

PART-TIME SPECIAL STUDENTS

Baker, Mary C., A.B.	Boston, Mass.
Brine, Constance L., S.B.	Newtonville, Mass.
Collins, Elisabeth N., Ph.B.	Louisville, Ky.
Condell, Claire E., A.B.	Melrose, Mass.
Darling, Dorothy B., S.B.	Arlington, Va.
Duggan, George L., S.B., M.D.	Lowell, Mass.
Dussault, Fernand, B.A., M.D., M.P.H.	Montreal, Canada
Fabisak, Theodore W.	Needham Heights, Mass.
Flanders, Christine E., S.B.	Worcester, Mass.
Gordon, Sophie, S.B.	Franklin, Mass.
Gravelle, Florence M. B., S.B.	Los Angeles, Calif.
Hannah, Evelyn E., S.B.	New York, N. Y.
Holzer, Hedwig H., M.D.	Dorchester, Mass.
Horn, Beverly W., S.B.	Brookline, Mass.
Kent, Virginia F., A.B.	West Roxbury, Mass.
Labrecque, J. François, B.S., M.D., D.P.H.	Quebec, Canada
Lacroix, Gladys S., S.B.	Malden, Mass.
Masurovsky, Sarah T., S.B.	Bronx, N. Y.
McKnight, Eleanor L., S.B.	Cambridge, Md.
Moody, Louise S., S.B.	La Moille, Ill.
Pennell, Walter J., A.B., M.D.	Wakefield, Mass.
Sherwin, Herbert, S.B., M.D.	Cambridge, Mass.
Tew, Kathryn A., S.B., S.M.	Lake Odessa, Mich.
Thomas, Ruth A., A.B., A.M.	Northampton, Mass.
Wallace, Lorine J., S.B.	Ames, Iowa

DEGREES

On February 24, 1947, the following Degrees were conferred:

DOCTOR OF PUBLIC HEALTH, *Magna cum Laude*

Jane Worcester, A.B. (*Smith Coll.*) 1931.

Thesis: The Epidemiology of Streptococcal and Non-streptococcal Respiratory Disease in Military Establishments.

Special Field: Statistics and Epidemiology.

MASTER OF PUBLIC HEALTH, *cum Laude*

James Morse Dunning, A.B. (*Harvard Univ.*) 1926, D.D.S. (*Columbia Univ.*) 1930.

MASTER OF PUBLIC HEALTH

Lucile Laughlin Cheney, A.B. (*Wellesley Coll.*) 1925.

Robert John Munro Horton, A.B. (*Princeton Univ.*) 1934, M.D. (*Western Reserve Univ.*) 1938.

George Aloysius Kenny, Ph.B. (*Providence Coll.*) 1931, S.M. (*ibid.*) 1937.

Anne Rasin Matthews, S.B. (*Univ. of Maryland*) 1929, S.M. (*Columbia Univ.*) 1936.

Marion Elsie Nichols, S.B. (*Kansas State Coll.*) 1937.

Martha Fredericka Trulson, S.B. (*Univ. of Wisconsin*) 1930.

On June 5, 1947, the following Degrees were conferred:

DOCTOR OF PUBLIC HEALTH

Emilio Budnik Boroda, M.D. (*Univ. of Chile*) 1938, M.P.H. (*Johns Hopkins Univ.*) 1944.

Thesis: Infant Mortality and Health Units in Chile.

Special Field: Public Health Practice.

MASTER OF PUBLIC HEALTH, *Magna cum Laude*

Alvin Robert Leonard, M.D. (*Univ. of Southern California*) 1942.

Irving Starin, S.B. (*New York Univ.*) 1929, M.D. (*ibid.*) 1932.

MASTER OF PUBLIC HEALTH, *cum Laude*

John Neil Buker, D.V.M. (*Ohio State Univ.*) 1945.

John Francis Conlin, A.B. (*Boston Coll.*) 1934, M.D. (*Tufts Coll.*) 1938.

Johannes Ipsen, M.D. (*Univ. of Copenhagen*) 1934, Ph.D. (*ibid.*) 1941.

Herbert Notkin, A.B. (*American Univ. of Beirut*) 1937, M.D. (*ibid.*) 1940.

John Rowe Philp, A.B. (*Univ. of California*) 1940, M.D. (*ibid.*) 1943.

Shivaramnandan Prasad Sinha, M.B.B.S. (*Prince of Wales Medical School, Patna*) 1937, D.P.H. (*Calcutta Univ.*) 1940.

Raphael Lawrence Tiruchelvam, L.M.S. (*King Edward VII Coll. of Medicine, Singapore*) 1932, D.P.H. (*Univ. of London*) 1936.

MASTER OF PUBLIC HEALTH

Romeo Ylagan Atienza, M.D. (*Univ. of the Philippines*) 1938.

Ralph Byron Berry, S.B. (*Univ. of South Dakota*) 1934, M.D. (*Creighton Medical Coll.*) 1937.

Mahendra Jivanram Bhatt, M.B.B.S. (*Grant Medical Coll., Bombay*) 1941.

- Audrey Allerton Bill, A.B. (*Wellesley Coll.*) 1937, M.D. (*Boston Univ.*) 1941, M.P.H. (*Massachusetts Institute of Technology*) 1943.
- Maurice Ailwyn Byer, M.B., Ch.B. (*Univ. of Edinburgh*) 1933.
- Robert Lashore Callison, A.B. (*Univ. of Nebraska*) 1929, M.D. (*ibid.*) 1932.
- Edward William Colby, S.B. (*Univ. of New Hampshire*) 1935, M.D. (*Albany Medical Coll.*) 1939.
- Walter Robbins deForest, A.B. (*Yale Univ.*) 1932, M.D. (*Columbia Univ.*) 1937.
- Willard Halsey Eyestone, S.B. (*Kansas State Teachers Coll.*) 1939, D.V.M. (*Kansas State Coll.*) 1941.
- Nicholas John Fiumara, A.B. (*Boston Coll.*) 1934, M.D. (*Boston Univ.*) 1939.
- Mary Frances Frazier, S.B. (*Columbia Univ.*) 1941.
- Harry Horatio Hudson, M.D. (*Univ. of Tennessee*) 1934.
- Clark Paul Jeffers, S.B. (*Univ. of Nebraska*) 1932, M.D. (*ibid.*) 1932.
- Shyue Chi Koo, M.D. (*National Medical Coll., Shanghai*) 1938.
- Frederick J. Lewy, M.D. (*Univ. of Berlin*) 1924.
- Walter Adolf Lindberg, M.D. (*Univ. of Oslo*) 1941.
- Cecil Spencer Mollohan, M.D. (*Univ. of Colorado*) 1928.
- Charles Henry Morhouse, Ph.B. (*Brown Univ.*) 1925, S.M. (*ibid.*) 1927, M.D. (*Univ. of Vermont*) 1932.
- Jan Muller, M.D. (*Masaryk Univ.*) 1938.
- Gertrude Nielsen, M.D. (*Univ. of Thuringia*) 1923.
- Joseph Patrick O'Mahony, M.B., Ch.B. (*University Coll., Cork*) 1925.
- Ella Lillian Peters, M.D. (*Univ. of Manitoba*) 1935.
- Edward Press, A.B. (*Ohio Univ.*) 1934, M.D. (*New York Univ.*) 1937.
- Hannah Mabel Rajamanikkam, M.B.B.S. (*Medical Coll. of Madras*) 1937, B.Sc. (*ibid.*) 1940.
- Ponniiah Rajasingham, L.M.S. (*Ceylon Medical Coll.*) 1935.
- Mervin George Rhoades, S.B. (*State Coll. of Washington*) 1942, D.V.M. (*ibid.*) 1944.
- Urcicio Santiago, M.D. (*Univ. of Bahia, Brazil*) 1936.
- Chang Yui Shu, M.B., Ch.B. (*Univ. of Glasgow*) 1938.
- Willard Merrill Van Sant, D.V.M. (*Kansas State Coll.*) 1937.
- William Donald Wellock, D.M.D. (*Harvard Univ.*) 1939.
- Renée Zindwer, M.D. (*Univ. of Vienna*) 1938.

Fall Term: FIRST PERIOD

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9	Nutrition 1a	Maternal and Child Health 1a,b	Nutrition 1a	Maternal and Child Health 1a,b	Nutrition 1a	Maternal and Child Health 4a
10	Public Health Practice 1a	Sanitary Engineering 1a,b	Public Health Practice 1a	Sanitary Engineering 1a,b	Public Health Practice 9a	Sanitary Engineering 1a,b
11	Biostatistics 1a,b	Physiology 1a,b		Physiology 1a,b	Biostatistics 1a,b	
12						
1						
2		Industrial Hygiene 2a,b		Industrial Hygiene 2a,b		
3		Public Health Practice 5a		Public Health Practice 5a		
4			Maternal and Child Health 2a			
5	Biostatistics 1a,b (Laboratory)	Nutrition 4a			Biostatistics 1a,b (Laboratory)	

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9	Nutrition 2b	Public Health Practice 2b	Nutrition 2b	Public Health Practice 2b	Nutrition 2b	Epidemiology 5b
10	Maternal and Child Health 1a, b		Maternal and Child Health 1a, b		Maternal and Child Health 1a, b	
11		Physiology 1a, b	Public Health Practice 11b	Sanitary Engineering 1a, b	Epidemiology 1b (Seminar)	Public Health Seminars
12	Epidemiology 1b	Sanitary Engineering 1a, b	Biostatistics 1ab (First Month) Epidemiology 1b (Second Month)			

2					
3	Biostatistics 1a,b and Epidemiology 1b (Laboratory)	Industrial Hygiene 2a,b	Maternal and Child Health 5b	Nutrition 4b	Maternal and Child Health and Biostatistics 3b
4					
5					

Spring Term: THIRD PERIOD

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9	Public Health Bacteriology 1c	Public Health Bacteriology 1c	Epidemiology 4c	Public Health Bacteriology 1c	Epidemiology 4c	Epi- de- mi- ology 5c
10						
11	Public Health Practice 4c	Bio- sta- tis- tics 2c,d	Public Health Practice 4c	Bio- sta- tis- tics 2c,d	Maternal and Child Health 9c	Public Health Practice 13c
12						
	Epidemiology 2c	Bio- sta- tis- tics 4c	Epidemiology 2c	Bio- sta- tis- tics 4c	Epidemiology 2c	Public Health Seminars
		Maternal and Child Health 1c		Maternal and Child Health 1c		

1:30

[illegible]

Spring Term: FOURTH PERIOD

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9	Public Health Practice 14d	Public Health Practice 14d	Maternal and Child Health 9d	Public Health Practice 14d	Epidemiology 5d
10	Public Health Practice 6c,d	Public Health Practice 6c,d	Maternal and Child Health 6c,d	Public Health Practice 14d	Public Health Practice 15d
11	Biostatistics 2c,d	Biostatistics 2c,d	Biostatistics 2c,d	Public Health Practice 8d	Public Health Seminars
12	Maternal and Child Health 12d	Maternal and Child Health 12d	Maternal and Child Health 12d	Biostatistics 5d	
1	Physiology 2d	Epidemiology 7d	Physiology 2d		

1:30

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2	Industrial Hygiene 1c,d	Industrial Hygiene 1c,d	Industrial Hygiene 1c,d	Industrial Hygiene 1c,d	Industrial Hygiene 1c,d
3	Nutrition 3d	Nutrition 3d	Nutrition 3d	Nutrition 3d	Nutrition 3d
4	Maternal and Child Health 10d	Maternal and Child Health 10d	Maternal and Child Health 10d	Maternal and Child Health 10d	Maternal and Child Health 10d
5	Public Health Practice 14d	Public Health Practice 14d	Public Health Practice 14d	Public Health Practice 14d	Public Health Practice 14d

(*) First Month of Period
(°) Second Month of Period

KEY TO AERIAL VIEW

- I School of Public Health, 55 Shattuck Street
 - Administration, Departments of Biostatistics, Industrial Hygiene, Maternal and Child Health, Physiology and Public Health Practice
- A Administration Building, Medical School
 - First Floor, Student Health Office
 - Second Floor, Library
- B, C, D, E Laboratories and Classrooms, Medical School
- F Vanderbilt Hall
- II Peter Bent Brigham Hospital
- III and V Children's Hospital
- IV Lying-In Hospital
- VI School of Public Health, Huntington Building, 695 Huntington Avenue, Departments of Epidemiology, Nutrition and Public Health Bacteriology





HUNTINGTON MEMORIAL BUILDING

